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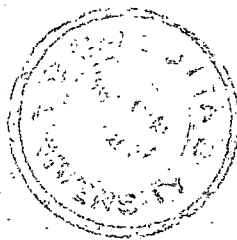
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PSYCHOLOGICAL CHANGES IN OLD AGE : AN OVERVIEW

R. G. CHATTERJEA

AND

N. SANYAL

During the last few decades there has been a marked interest in problems of ageing in virtually every industrialised nation.

In 1900, there were approximately three million persons aged 65 and over in the United States and by 1960, the population in this age-group had increased to about sixteen millions, and it was calculated that it would reach twenty-one millions by 1975 (Reichard *et al.*, 1962). Increases in the number of old men have also occurred in other industrialised countries. The aged state is a condition in which declination of functional capacity is found i.e. sensory and motor impairments are found in persons aged 65 years. Therefore the aged may be arbitrarily defined as persons who are 65 years of age or over. But the concept of old age differs in the tropics, where due to extreme climate, mostly due to predominance of summer rather than winter, a person above 55 may justifiably be termed as old. Moreover, the age limit is very often determined by the person's tenure of work in the establishment. While government offices have limited 55-58 years as the retirement age, statutory and some non-government agencies have limited them to well above 60

years. The general notion in india through the ages has been that a person above 50 years should take leave of the household and start meditation. Though this notion is no longer in vogue, the general trend appears to favour full retirement from active work after 65 years.

Research literatures indicate that certain psychological changes in old age follow physiological regression. Most of the changes occur gradually and the old are not handicapped seriously. The important psychological changes that occur in old age have been discussed briefly in this paper.

SENSATION AND PERCEPTION

In general, it may be said that the organs of special senses have higher thresholds with advancing age.

In case of vision *acuity* declines with age, but that *acuity* may be improved by an increased illumination. *After dark adaptation*, the absolute threshold for light is higher in older persons.

Light threshold: Recognition of objects in very low illumination is affected by age because of the demonstrated age change in the light threshold after dark adaptation (Birren, Bick and Fox, 1948; Birren and Shock, 1950).

Critical Flicker Fusion: Critical Flicker Fusion declines in old age in a linear and negative manner. As brightness of light increases, the elderly people show a greater relative increase and a smaller absolute increase in the fusion threshold.

Colour Vision: The data on age-differences colour vision are inconsistent and it may be that colour vision correlates positively with acuity or that both depend on some common factor that is operating as the visual system ages.

In case of *audition* also the picture of decreased sensitivity is found. The incidence of deafness increases with age (Beasley, 1940). In a study, Kelley (1939) found no significant loss for tones below 512 cycles from 60-86 years.

Taste Preference: The study of age changes in the chemical sensitivities (taste and smell) has been neglected. The absolute threshold for sweets has been shown to be highest in elderly subjects (Laird and Breen, 1939).

Research on cutaneous sensitivities—pressure, pain, cold and warmth—has been sparse, but where it has been conducted, it has sought to determine absolute thresholds. In corneal sensitivity, vibratory sensitivity, and pain sensitivity—these thresholds increase with age. The elderly are less able to maintain normal body temperature when exposed to cold and heat (Braun, 1960).

The reduction of efficiency found in sensory processes with ageing reduces the quantity and quality of the information available to the organism. The sensory decrease that occurs with age affects various modalities differently.

The changes in C N S, in the sensory receptors, and in their specialized structures result in a reduced sensory input with age. Thus compared with young adults, the older persons can make discriminations among stimuli of lower intensity.

In the investigation of perceptual speed, task or discrimination difficulty had been varied, and response latency recorded. Thus speed and accuracy of addition as a function of problem length had been studied as well as judgment of differences of length of lines which were presented tachistoscopically also investigated. The power performance of the elderly subjects were interpreted as reflecting a change in a general speed factor underlying many perceptual processes (Braun, 1960).

Psychomotor Skill and Performance

Sensorimotor performance of old people is limited by central mechanisms. This may be conceived as having a finite capacity in the sense that there is a maximum amount that can be done at any one time and in any given period of time.

There seems to be relatively little change of speed or accuracy among older people with very simple tasks, viz., classical reaction time measures. Striking changes with age are found in the method or manner of performance. For example, older people display a rather consistent tendency when possible to shift their emphasis from speed to accuracy.

One of the most distinguishing features about ageing persons is the tendency to slowness of behaviours. The generalized slowness of behaviour in older persons is looked upon as being most probably an expression of a primary process of ageing in the nervous-system.

A review of research on reaction time showed the importance of the subjects' expectancy of a stimulus on the time taken to respond

(Botwinick 1959). A reduction in such capacities as strength, sensory activity and an increase in reaction time are commonly found from age group forty (Lehman, 1953). Citing evidence from industrial studies LeGros and Dunne (1956) indicate that little change in worker performance is found up to age sixty or sixty-five.

Some researchers believe that individual difference in group averages or norms, are less useful than they are for younger persons. Excellent description of analytical experiments on age changes in human skill have been reported by Welford (1958).

Learning :

At the present time there is little evidence to suggest that there is an intrinsic age difference in learning capacity over the employed years, i.e., up to age sixty. This is not to say that learning of certain psychomotor skills may not show limitations in older persons because of problems of performance, of speed limitations or of life-long habits that include laboratory study. But further studies are needed to indicate the optimum condition for adult learning over the life-span. These include studies on the massing of distribution of practice, the focussing of attention and set, and the encouragement of learning strategies by older subjects.

Memory :

What happens when a normal person becomes aware for one reason or another that he is growing old. Probably the first thing noticed is the failure of memory for words and names and also, possibly that recent events are soon forgotten. Deterioration in memory begins quite early in life but it becomes more marked in old age (Hill, 1961).

THINKING AND INTELLIGENCE

Friend and Zubek (1951) studied on 480 S_s aged 12 to 80 years using Watson and Glaser Critical Thinking Appraisal and found a marked difference in the performance of the older and younger subjects. The investigators pointed out that although the elderly subjects as a group scored poorly on the tests of critical thinking, many of them showed performance at a level as high as, or higher than, young adult subjects. Constructive and creative mental activity through the use of

proverbs was studied by Bromley (1956). The oldest subjects showed a tendency to give a somewhat lower proportion of good interpretation of proverbs. The investigation proposed that the changes with age in normal intellectual performance could be due to (a) a loss of performance potentialities, which govern mainly the quantity of output and (b) a loss of performance evaluation, which governs mainly the quality of output. The study indicated that the older person does not have the same amount of information about his performance as has the younger person.

The pattern of mental abilities changes with age. One study found that scores in perceptual and dexterity tests declined from the teens to the seventies, whereas comprehension and verbal fluency test scores held up well until the mid-forties (Bilash and Zubek, 1960).

Administering the Raven Progressive Matrices and the WATS Vocabulary subtest on 60-79 years old and undergraduate subjects, Cunningham and Clayton (1973) tested the hypothesis that the correlation between fluid and crystallized intelligence declined systematically across the age-span after young adulthood.

Problem-solving involves many component abilities, each with its own limit, which may change with age. The extent to which a problem has familiar elements determines whether it will be solved more efficiently by the old or young adult. If the problem emphasizes perceptual capacity or memory-held instructions, the young adult will probably perform more effectively.

Any discussion of age and outstanding achievement, or age and intellectual productivity, concerns average trends ; there are considerable individual differences. Furthermore, there are long-lived scientists who maintain intellectual productivity well into their eighties. Physical influences on intellectual productivity must also be noted.

PERSONALITY

With advancing age personality may change. The transition from middle to old age can be assumed to have a significant impact on personality development paralleling earlier stages of development in many ways. But at present no theory exists which takes full account of the ageing personality (Riegel, 1960). For possible extensions, Riegel concluded : ".....it may be of greater advantage at the present time, and at least for basic research in a new domain such as the psychology of ageing, to study only sub-systems—perceptual, learning, or social

processes and their developmental characteristics—rather than the total personality all at once, hoping that one day all these different aspects may become integrated into a single system (p. 844).

CONCLUSION

In geriatric psychiatry emphasis is given to mixed etiology in mental illness in older persons. It has been pointed out that fewer persons have symptoms regarded as categorically either organic or functional in background. The treatment of the older patients will become more specific and more rationally based if more knowledge of the normal psychology of ageing is acquired.

The normal psychology of ageing is beginning to be understood. The characteristics that promote optimum adaptations, should become better known as further research is conducted on the relations—psychological, psychological and social changes in old age.

Psychology Laboratory University of Calcutta.

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FEELINGS AND CONSCIOUSNESS IN WHITEHEAD'S PHILOSOPHY.

ANIL KUMAR MUKHERJEE

I

I. 'Feeling', as considered in Whitehead's philosophy has an extraordinarily wide range,—the term being synonymous with 'positive prehension', i.e. any act "in which data are genuinely included in the real internal constitution of a new actual entity".¹ It ranges from 'unconscious reaction' to higher forms of conscious experience—aesthetic and cognitive. Nevertheless, it is, in its fundamental form, "emotional—blind emotion received as felt elsewhere in another occasion". In all its various forms, including knowledge, it is therefore always eminently marked by its affective tone. Knowledge is regarded as a small class of feelings.

II. Each actual entity is a subject of mainly two types of feeling—physical and conceptual. A physical feeling of an actual entity consists of its prehensions of the other actual entities which existed formally (i. e. as subjects) and relinquished their formal existence (subjectivity) just before the rise of the new actual entity. A conceptual feeling of an actual entity consists, on the other hand, of its grasp of some pure possibility by a process of abstraction from its physical feeling. This may be explained thus: The emerging actuality recognises, during its physical prehension, the eternal object, say green, as ingredient in the prehended actuality (viz., the green leaf), as the latter's qualitative pattern. In the second moment of its self-building, the newly arising actuality considers that eternal object abstractly i. e. as "greenness"—a pure potentiality divested of all reference to any particular actuality.

III. It comes out that a physical feeling has dual aspects—indicative feeling and physical recognition. An indicative feeling implies a bare contact of the prehending subject with some actuality considered as an object; and a physical recognition consists of an observation of the qualitative pattern of the objectified actuality. This is the basis of all forms of apprehension and is also termed feeling in 'causal efficacy'—

implying direct connection of an emerging actuality with the external world consisting of other actualities—direct connection involving 'indicative feeling' and 'physical recognition'.

IV. A conceptual feeling has, as its datum, some abstract entity such as greenness. The abstract datum (eternal object), conceptually felt, may determine the mode of interpretation by the new actuality in its perception of the past actuality (or the past actual world) which it felt physically at the initial phase (i. e. the phase of causal efficacy) of its own emergence. (A complete perceptual act involves an interpretation of the data immediately apprehended i. e. of the sense-data). The phase of one's prehension involving an interpretative act has been termed feeling in 'presentational immediacy'. But because this interpretative act also belongs to the self-creative process (self-realisation) of the new subject, the mode of interpretation as determined by the eternal object also turns out to be the mode of self-realisation of the rising subject. It is in this way that a new actuality derives its qualitative pattern from the past actual world. Hence a conceptual feeling, besides being a mode of perception, is also a process by which some eternal object becomes an ingredient in the feeling subject. This may be understood to be an acquisition of a novel content by the prehending actual entity.

V. Whitehead, however, regards the self-creation of an actuality as a selective act which does not finally include in its own internal constitution all the data formerly felt. Some of the data conceptually prehended are eliminated i. e. negatively prehended. 'Feeling' occurs in respect of those data only that are included in the real internal constitution of the subject. A 'negative prehension' is not therefore, included in 'feeling', since such a prehension involves elimination from the life-process of the prehending actual entity. Though, however, a negative prehension itself is not a feeling, it requires as its precondition some feeling (i. e. a positive prehension) of the eternal object which is to be eliminated. In other words, the eternal object has to ingress in an actual entity in the first instance, in order to be eliminated from the internal constitution of that actuality.

VI. "In a conceptual feeling the new element is felt as desired in the immediate present or the relevant future".² The conceptual feeling of some future possibility, which is regarded as the final phase of the development of the feeling of actual entity, consists in the laying down of the norm to which the future actuality should conform. This anticipation "assumes the form of purpose to transform concept into fact".³ We are

said "to tread on the border of morals" when we thus determine in anticipation what is really "consistent with the subjective aim as directed towards richness of order".⁴ The anticipated factors, however, contribute to the subjective own intensity, what marks the final phase of that subject in self-creation. The subject may now be conceived as laying down conditions within the constitution of its own final phase to which the future should conform, for the present is what is going to be re-enacted in the future. In this sense, "the future belongs to the essence of the present fact". "Thus the self-enjoyment of an occasion of experience is initiated by an enjoyment of the past as alive in itself, and is terminated by an enjoyment of itself as alive in the future".⁵

VII. Because any eternal object conceptually felt by an actual entity is always likely to be negatively prehended by that actuality, a conceptual feeling cannot be regarded as a feeling of any settled fact. Hence such a feeling has been understood to be a mere "urge towards the future based on an appetite in the present" indicated by the general term appetition.⁶ Whitehead speaks in his *The Function of Reason* of "thirst as an example at a low level".⁷ "It drives an organism", says Emmet, "to seek some sort of relief, and so to promote life, whereas the unchecked physical tendency would lead to its being dried up".⁸ Whitehead holds that the feeling of something not yet realized and yet present in the form of an urge towards realization, supplies the very basis of the creative advance of the world of actualities. This urge is, like what S. Alexander terms 'nisus', unconscious. Whitehead repeatedly dissuades us from confusing "conceptual feelings" with "the relatively small class of intellectual feelings called conscious."

VIII. Though each actual entity is dipolar i. e. having physical prehensions and a mental pole consisting of its conceptual prehensions, "the mental pole remains dormant in the actualities of the lower order". "In the vast majority it is dormant or negligible." Since, 'mentality' is one of the extremes of a dipolar actual entity, its growing into prominence, in course of the evolution of nature, implies gradual increase of contrast between the products of the mental pole and those of the physical pole in the unity of the actual entity. The naive form of the contrast may be exemplified thus: When we physically feel an actuality as green, we consider the quality 'green' as relevant to the felt actuality; but as we conceptually feel the quality as an abstract entity i. e. as pure greenness, we consider it as irrelevant to any particular actuality, as only potential for ingression in any actuality. And "Conscious perception".

says Whitehead, "is the feeling of what is relevant to immediate fact in contrast with its potential irrelevance".⁹ The contrast, at first latent in the actual entity, manifests itself increasingly and attains the height of intensity that yields the condition essential to the emergence of consciousness. "Consciousness", Whitehead elucidates, "is the quality inherent in the contrast between Actuality and Idea'ity, that is, between the products of the physical pole and the mental pole in experience. When that contrast is a feeble element in experience, then consciousness is there merely in germ, as a latent capacity. So far as the contrast is well-defined and prominent, the occasion includes a developed consciousness."¹⁰ In one's logical awareness, therefore, one recognizes an object by recognizing its difference from what the object is not. When I prehend something consciously as green, I am distinguishing it from the colour which it is not".¹¹ Difference or contrast is obvious in a negative prehension where the fact observed overwhelms the expectation about it—as in perceiving a leaf as gray where the supposition is that the leaf is green. Consciousness is present in a highly developed form in such a situation exemplifying an obvious contrast. "Negative prehension", therefore, "is the triumph of consciousness".¹²

IX Whitehead would never identify 'mentality' with consciousness, though he observes that consciousness must be absent where mentality is dormant. He does not, therefore, mean by 'dormant ... mentality' anything of the sort of latent consciousness—in his description of the creatures of the lower orders. What he exactly means is that, in a situation where mentality is dormant, the contrast between ideality and actuality is too feeble to enable consciousness to ingress. With the development of the mental pole, the contrast becomes manifest as a condition required for the ingression of consciousness as an element of the 'subjective form' of the feeling of any actual entity. A typical idealist would, however, insist upon an identification of mind with consciousness. For Leibnitz, as for Hegel, consciousness is the essence of mind which unfolds itself in increasing clearness as the process of evolution attains higher and higher forms. 'Dormant.....mentality' would therefore imply, according to them, dim consciousness which may also be described as confused consciousness. Leibnitz, for example, makes a distinction between confused perception, in the case of undeveloped monads and clear perception, in the case of developed monads.

X Consciousness is looked upon by Whitehead as "an emphasis upon a selection" of objects of experience. "That portion of experience

irradiated by consciousness is, as he says, "only a selection".¹³ "Emphasis upon a selection" implies a highly selective attitude towards the data felt—"an element in the subjective form" of inclusion of data in the feeling—life of the self-creative actual entity. Need for selection and elimination arises only in a situation of contrast, that is to say, in a situation of conflict between alternatives. Such complicated situations necessarily provoke emphasis upon selection on the part of the self-building actualities, and consciousness arises when such emphasis has reached its "acme". Thus consciousness is a mode of attention eliciting into clarity some aspects of an encountered complexity to the neglect of others. "The basic mode of experience, from which sense-perception elicits and selects, is understood as unconscious or pre-conscious. It is a mode of experience which underlies and makes possible a selection from it. Consciousness, according to Whitehead, is not itself a mode or level of experience, but an activity of attending upon something experienced"¹⁴.

XI There is a natural contrast between actuality and ideality at each level of nature ; but at the levels of inorganic entities and plants, where the mental pole functions in a dormant condition, the contrast is too weak to offer any resistance to the free and easy decisions i.e. to the spontaneity of the actual occasions. There is, therefore, no necessity for the rise of consciousness, in absence of the requirement for providing the extreme of selective emphasis." With the further creative advance of the universe towards increasingly larger and richer spheres of life and experience, the actual entities confront an overwhelming number of potentialities for considerations. Spontaneity of the actualities, having been thus hampered, seeks a new outlet necessitating an emergence of consciousness.

XII It was noted, however, that intentionality, purposiveness and selection are the features that mark all levels of evolution. Even the so-called inorganic things are found to "respond to the influences reaching them, select from them and react along a particular line of possibility in accordance with their subjective aim."¹⁵ But the depths of emphasis upon selection are poor at the low levels where the situations are relatively simple. "The acme of emphasis upon selection" required for the rise of consciousness is, therefore, not to be found everywhere, though purposiveness reigns unchecked at all regions of the universe. Whitehead therefore claims that consciousness presupposes a back-

ground of feeling or experience which is not conscious. In this connection, he employs the term 'instinct'.¹⁶

II

I. Whitehead regards 'perception' as a kind of feeling; but his definition of perception is wider than the narrow definition of Descartes, Locke and Hume based on analysis of our conscious experience.¹⁷ The notion of mere consciousness is a high abstraction, according to him, for consciousness is only a thin layer, a narrow fringe of our whole perceptual life. Since consciousness emerges upon a selection and illumines the selected data only, the data of a conscious perception appear as discrete, i.e. disconnected from one another, segregated from their sub-conscious and unconscious background. Hume, therefore, found the *sensa* as standing "starkly, barely, present and immediate..... silent as to the past and future."¹⁸ The total background of our original experience from which data are selected for conscious attention is termed perception in 'causal efficacy', and our experience of the selected data is termed perception in 'presentational immediacy'. In spite of their appearing, in our clear consciousness, "as here, now, immediate and discrete", the percepts are understood by Whitehead to be concerned with one another on account of their efficacious bases. "Concernedness" is said to be "of the essence of perception". Hume clothes each impression of sensation with 'force and liveliness' which Whitehead interprets as its character of concern with others. Whitehead refers, in support of this interpretation, to Hume's doctrine of custom, the entire basis of which rests upon the assumption that "the force and liveliness of one occasion of experience enter into the character of succeeding occasions.....If the occasion be entirely separate, as Hume contends, this transition of character is without any basis in the nature of things".¹⁹

II Whitehead notes that Hume appears at the threshold of the truth when he assumes "transition of character" from one occasion to another, in his doctrine of custom, but he further observes that Hume fails to maintain his position near the truth for want of an adequate explanation of the said "transition of character". Whitehead gives his own explanation. "That community of occasions considered in physical science is", he says, "the set of happenings which fit on to each other—as we say—in a common space-time, so that we can trace the transitions

from one to the other".²⁰ He also speaks of the immediate past as surviving to be again lived through in the present. "In human experience, the most compelling example of this kind of immanence is our knowledge of our own immediate past". "I am not referring to our memories of a day past, or of an hour past, or of a minute past..... roughly speaking, it is that portion of our past lying between a tenth of a second and a half a second ago. It is gone, and yet it is here".²¹ He insists that "either there is something in the immediate occasion which affords knowledge of the past and the future, or we are reduced to utter scepticism as to memory and induction : but that immediate occasion *is* more than a *sensum*." "It is our indubitable self, the foundation of our present existence."²² We intuitively feel the past in the present, because of a more fundamental feeling in ourselves which is the feeling of an enduring self-identity in the welter of changing facts and circumstances, "Self-identity is the continued life of the immediate past within the immediacy of the present." Thus the thread, which continues into each present occasion, runs through the whole course of its life from birth to death. "This personal identity is the thing which receives all occasions of the man's existence. It is there as a natural matrix for all transitions of life, and is changed and variously figured by the things that enter it ; so that it differs in its character at different times..... We shall not be far wrong if we describe it as invisible, formless, and all-receptive,"²³ "Since it receives all manner of experiences into its own unity, it must itself be bare of all forms".

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ground of feeling or experience which is not conscious. In this connection, he employs the term 'instinct'.¹⁶

II

I. Whitehead regards 'perception' as a kind of feeling; but his definition of perception is wider than the narrow definition of Descartes, Locke and Hume based on analysis of our conscious experience.¹⁷ The notion of mere consciousness is a high abstraction, according to him, for consciousness is only a thin layer, a narrow fringe of our whole perceptual life. Since consciousness emerges upon a selection and illumines the selected data only, the data of a conscious perception appear as discrete, i.e. disconnected from one another, segregated from their sub-conscious and unconscious background. Hume, therefore, found the *sensa* as standing "starkly, barely, present and immediate..... silent as to the past and future."¹⁸ The total background of our original experience from which data are selected for conscious attention is termed perception in 'causal efficacy', and our experience of the selected data is termed perception in 'presentational immediacy'. In spite of their appearing, in our clear consciousness, "as here, now, immediate and discrete", the percepts are understood by Whitehead to be concerned with one another on account of their efficacious bases. "Concernedness" is said to be "of the essence of perception". Hume clothes each impression of sensation with 'force and liveliness' which Whitehead interprets as its character of concern with others. Whitehead refers, in support of this interpretation, to Hume's doctrine of custom, the entire basis of which rests upon the assumption that "the force and liveliness of one occasion of experience enter into the character of succeeding occasions.....If the occasion be entirely separate, as Hume contends, this transition of character is without any basis in the nature of things".¹⁹

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It may however be that what is found realised in the tree is 'green' as contrary to the expectation 'brown'—"green and not brown". This feeling of contrast between realised eternal object and unrealised alternative is very important, as it marks the beginning of consciousness. Emmet observes that²⁸ the notion of hybrid physical feeling is insufficiently explained and seems very obscure. Though this type of prehension is one in which an actual entity is prehended (as in the case of any physical prehension), the contents involved in the process of transfer (of feeling from one occasion to another) are obtained from the mental pole (conceptual prehension) of the prehended actual entity. One actual entity prehends another actual entity in respect of the possibility envisaged by the latter actual entity (prehended actual entity). Usually however the contents prehended are derived from the physical pole. In this case (hybrid physical feeling), on the other hand, there is no transfer of concrete content. The datum commonly is an abstract entity (eternal object); but the same datum may be felt by different actual entities with different subjective forms. Whitehead adds very interestingly that a hybrid physical feeling may enable the prehending actual entity to have a direct prehension of non-contiguous actualities. This may make possible the occurrence of so-called mental telepathy i.e. the sharing of content without requiring any physical linkage of a contiguous sort. Emmet further observes that "the only clear statement of what a hybrid physical feeling may be is where we are 'told (*PROCESS AND REALITY*) that in feeling eternal objects we have hybrid feelings of God, since all eternal objects are conceptually prehended by God of whom we have physical feelings because He is an actual entity".²⁹

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4. Each actual occasion is born with a principal aim at realisation of some eternal object. This aim is principal because it persists over the whole period of self-realisation of the actual entity and lays down the frame-work within which the activities of self-creation of the actuality display, in all their phases, a common qualitative pattern.
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CONTRIBUTION TO RURAL SOCIOLOGY : LITERATURE ON RURAL SOCIAL STRUCTURE IN BENGAL.

ABHIJIT SANKAR DASGUPTA

Two distinguished commentators on Indian Sociology have questioned the sociological reality of the Indian village. They are of the opinion that caste should be a unit of study and not the village because materials presented by the contributors have shown inadequacy of the village as a unit of study.¹ This view has already been questioned by the authors on Indian Sociology. In order to consider the question of "adequacy" one has to take into account a huge body of literature that we have on the rural communities and make a critical survey of them. The present paper peeps into the literature we have on Bengal's rural social structure. This kind of survey is useful for any social anthropologist who is keen on considering different dimensions of rural social structure. It has been said, "It is a matter of good fortune that we have a fairly inexhaustible store of literature to aid this type of research from the Charyapadas down to Modern Novelists, who have at every age dwelt minutely on the life of the common men, their disabilities, privileges, joys and sorrows".²

During the period 1857-1885, the East India Company Officials in Bengal tried to develop an administrative system to maintain law and order. This led them to understand the situation in rural Bengal. They had carried on investigations on the nature of the land tenure in Bengal. A good deal of papers were published during this period. Commenting on these papers it has been said, "Although it is clear that many of the efforts to learn the nature of Bengal rural Society were confused and incomplete, nonetheless there were an increasing number of officials like James Grant and John Shore, who from document and first-hand experience had considerable *knowledge of actual functioning* of Bengal society."³

The study of the rural economy of Bengal had gained momentum because of the economic ruin of the rural areas on account of the ruthless exploitation of the Bengal peasants by the indigo planters. Thus we find in Peary Charan Mitter's *Alaler Gharer Dulal*, a realistic account of the economic serfdom to which the peasants were reduced as a result of

oppressive policy of the Bengal planters. Dinabandhu Mitra depicted in his famous drama *Nil Darpan* (1861) the physical and economic oppression from which rural Bengal suffered at the hands of the indigo planters.

Before the Bengal Tenancy Act of 1885 was placed on the Statute book, Bankim Chandra wrote a number of powerful essays on the economic injustice meted out to the peasants of Bengal by the tyrannical Zamindars. Bankim's essay on *Bangla Desher Krishak* presented such a picture. His data were mainly collected from the Government reports, despatches and from the results of original investigation carried on by his elder brother Sanjib Chatterjee. Sanjib Chatterjee's essay "Bengal Ryots" depicted the unfortunate lot of the ryots during the middle of the 19th century. A similar attempt was made by Promatha Chaudhuri in his essay *Raiyater Katha*.

In this paper my purpose is to show two main categories of works :

- a) That which has relied heavily on the written materials lacks field-work method,
- b) That which is based on an intensive fieldwork often on the method of participant observation.

In the first direction a few studies have already been made in Bengal mainly to explore different positions of caste Hindus. Niharranjan Ray's *Bangaleer Itihas*, (1966) : Nirmal Kumar Bose's *Hindu Samājer Garan* (1949); and Kshitidhan Sen's *Hindu Samaj Bayabasthar Sambandhe jatibheda* need special mention. These works have been published in Bengali. I would like to place them in the first category. These writings include a wide range of topics e.g. caste rules in Bengal, changing patterns of caste relations, position of Scheduled Castes, Scheduled Tribes in our society and so on. Nirmal Kumar Bose carried on investigations in different fields. He made a detailed survey of the types of villages in Bengal. He paid special attention to the problems of tribal communities and backward classes of Bengal. He pointed out how in the economic field caste has seriously been weakened by the intrusion of a system of production and economic relations which is foreign to it. But besides relying on first-hand literature, Prof. Nirmal Bose carried on field work in the Birbhum district. This was not an intensive fieldwork. All three books have examined caste in relation to occupation. Niharranjan Ray has made special reference to this problem in his writings. The authors of these works are largely historical contemporaries.

The history of the field-work method goes back to the days of Lal

Behari Day, who published *Bengal Peasant Life* as early as 1874. Lal Behari Day (1824-1894) was born at Sanapalasi in the district of Burdwan in Bengal. He was a journalist of repute and a Professor of English literature in Hooghly College for some time. He is also recognised as a pioneer among Indian folklorists. *Bengal Peasant Life* is a document of great value not only to the social historian interested in the past but also to those who seek an understanding of the present-day rural life in Bengal. In his own words, "The reader is to expect here a plain and unvarnished tale of a plain peasant, living in this plain country of Bengal." It is interesting to recall the story that lies behind this work. In the year 1871 Baboo Joy Kissen Mookerjee of Uttarpara, a zamindar of Bengal, offered a prize of Rs. 50 for the best novel, to be written either in Bengali or in English, illustrating the "Social and domestic life of the rural population and working classes of Bengal." In 1874, Lal Behari Day was awarded this prize. In the same year the book was published in two volumes under the title of *Gobinda Samanta*. One of the interesting features of his account is the presentation of pictures of different social functionaries in rural Bengal e.g. the Match-Maker, the Hindu Widow, the Zamindar, the Mahajan and so on. He made special references to some Bengali social festivals e.g. the Navanna, the Harvest, the Car festival and the like. His village Kanohanpur was situated in the District of Burdwan.

Ramkrishna Mukherjee nearly thirty years ago studied villages in terms of their productive organization. He had studied six villages in the Bogra district of the then East Bengal. Ramkrishna Mukherjee in the *Dynamics of Rural Society* (1956) tried to demonstrate a kind of statistical congruence between the caste system and the three major economic classes of Bengal. Ramkrishna Mukherjee has further added a number of papers on different sociological problems.

Radhakamal Mukherjee studied some aspects of the economic life of Bengal and the results of his labour are embodied in his book entitled *Foundation of Economics* (1916).

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Gouranga Chattopadhyay (1963) was primarily concerned with the method of participant observation to explore different dimensions of rural social life. In his book called *Ranjana: a village in West Bengal*, the author shows how old rural values and ideas are changing as a result of urban influences. But the author is of the view that a study in West Bengal meant work without any help of an interpreter and the advantages of that also weighed considerably in favour of taking up a village in Bengal. Here the author relies mainly on the method of

participant observation. His exposition is less marked by a critical evaluation of the local-level politics. Generally, it deals with almost every aspect of social life.

The impact of economic development in the social life has also been shown by some scholars. Ajit Danda and Dipali Danda's book called *Development and change in Basudha* (1971) needs special mention. They too studied a village of the Burdwan district. Secondly, they also followed the field-work method of participant observation.

It is interesting to note that we have some good studies based on an intensive field work but for a short time. These studies include villages of the districts like Burdwan, Birbhum and Nadia. In all this literature we find an exposition of the life style of different social categories of Bengal e.g. the bargadars, the jotedars, the zamindars, the ryots and the like. Andre Beteille's note on the jotedars is a landmark in this respect (1974). His primary concern was to show their social position, changing role, and characteristic mode of living. Beteille had selected Burdwan district for the field work. There has been a growing interest among the scholars to study the political life of the villages. Ralph Nicholas (1963) has made special references to it. Nicholas has tried to show the nature of cleavages in rural Bengal. He has taken two villages, namely Radhanagar of Midnapur District and Chandipur of the district of Murshidabad. He speaks of two ideal types of political conflict in rural Bengal ;

- a) Conflict between groups which are structurally equal ;
- b) Conflict between groups which stand in a relation to superiority or subordination to one another.

Benoy Ghosh (1957) has shown different aspects of the fairs and festivals of Bengal. His account includes a number of villages mainly of the delta region.

Besides them D. Bandyopadhyay, J. P. Bhattachariya, and others have undertaken similar ventures to study rural social life.

Finally, I would like to mention the institutional effort behind this kind of investigation. Credit should be given to the departments of Anthropology and Political Science of the University of Calcutta. The Agro-Economic Centre for East India of Visva Bharati too carried on investigations in different parts of Bengal. But they were mainly concerned with the economic side of the problem. The Agro-Economic Research Centre for East India was started at the Visva Bharati in

July 1954. The primary function of the Centre is "to carry on a continuous study of change in the rural economy by means of survey of a number of villages each year. The survey is to be repeated in the same group of villages in intervals of five years. It was only in 1958 that J. P. Bhattacharjee and his associates published "Sahajpur ; Social economic study of a West Bengal village". Sahajpur is situated in the District of Birbhum. Before this work was done, Kalimohan Ghosh had surveyed in an intensive manner the village called Ballavpur ; and Arthur Geddes, formerly of the Visva Bharati, made a thorough study of the rural region surrounding the Academy. This survey was entitled as "In the land of Tagore, the rural civilization of Western Bengal and its geographical factors" and it was published in 1922 with an introduction by Demangeon of the University of Paris. The Indian Statistical Institute has published a number of papers on Bengal rural social structures.

It is useful to go through all this literature for a proper understanding of Bengal rural life. It is beneficial too for any debate on the question of "adequacy" of the materials presented on rural social structure in general.

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THE U. N. AND WOMEN.

ASHOKE MUSTAFI

The year 1975 should perhaps be reckoned as a memorable year since it happened to be the International Women's Year as well as the midpoint of the Second U. N. Development Decade. All governmental and private agencies the world over were urged by this august body to examine the extent to which women have been "integrated in the total development" of their own countries. The International Women's Year likewise has been characterised by a call for intensified action on the part of different nation-states to promote equality between men and women and to ensure at the same time full integration of their womenfolk in the scheme of total national development. They have been requested to take cognizance of the importance of women's increasing contribution towards the development of the friendly states as much as cooperation among states and to ensure their involvement in the strengthening of world peace. All member states and interested organisations have been asked to adopt suitable steps for the full realization of the rights of women and their advancement on the basis of the declaration on the Elimination of Discrimination Against Women.

Article 8 of the U. N. Charter does away with all manner of sex discriminations in the matter of women participating in its principal and subsidiary organs. The U. N., however, was not slow to recognize the dismal fact that despite some progress having been achieved by states in the business of legal equality of women, discriminatory attitudes, belief and practices persist even now as a way of life over a large slice of the globe. In fact the International Women's Year has been observed to enthuse states of the world to abolish all discriminatory laws and prejudices and to help women to realise their full potential. The international community could only hope to set a model to be followed in this direction only if men and women with education and initiative rise to the challenge. As a matter of fact a new era for women has dawned for furthering the scope of their increasing participation in the job of development of their country and at once of creating a better world. It should, however, be conceded that quite a number of women—victims of age-old injustice and oppression—are largely unaware of the existence of all their rights in various parts of the world.

The U. N., to be sure, is solemnly committed to the goal of equal rights of men and women as per its proclamation in the U. N. Charter and Declaration of Human Rights. Through its numerous international instruments it has urged universal recognition of women's equal rights, in law and fact as also exploring all possible ways of offering them equal opportunities for the exercise of their genuine rights upon its member states. These member-states have in their turn pledged universal respect for and observance of human rights without distinction of race, sex and religion.

The Commission on the status of women in 1970 recommended to the General Assembly a programme of concerted international action for the advancement of women and adoption of general objectives and setting minimum targets for phased national action in this regard. The General Assembly in its turn adopted a strategy to integrate women in its total development effort through the unanimous adoption of the declaration on the Elimination of Discrimination Against Women in November 1967, after four years of debate and drafting by the commission on the status of women. The Declaration sets forth the convictions as well as the concerns of the U. N. regarding invidious distinctions in respect of women thriving throughout the world. Containing as it does eleven articles and a preamble, such a Declaration was overdue in view of the fact that "there continues to exist at present considerable discrimination against women for all the Charters and Declaration of Human Rights".

The Preamble to the said Declaration (a) reaffirms faith in the dignity and worth of human persons and in the equal rights of men and women, (b) views discrimination as incompatible with human dignity and welfare of the family and society, preventing female participation on equal terms with men, and finally reminds us about the great contributions made by women in social, economic and cultural life of people in the different countries of the world. The Preamble would seek to draw upon women's full services and talents for development work. It expresses the firm conviction that the full and complete development of a country, the welfare of the world and the cause of the world peace all urgently require the maximum participation of both the sexes in all fields of activity. Article I of the Declaration looks upon discrimination against women as an offence against human dignity itself. Article II urges non-discrimination and equal legal rights of the sexes to be ensured through state constitutions and international instruments of the U. N. Article III stands for educating national opinion adequately towards the

eradication of sex prejudice. Article IV insures equal rights for women for voting in elections and referendums and holding public offices. Article V would accord the same right to women as men to acquire, change or retain nationality. Article VI speaks of equal marital status, free choice of spouse and equal legal property rights for women. It would prohibit child marriage and impress upon parents equal rights and duties in respect of children. It would not, however, speak of destroying the unity and harmony of the family as the unit of society. Article VII would like to do away with all previous discriminatory penal codes. Article VIII speaks of legislation to restrict all forms of traffic in women. Article IX would enjoin equal rights to education on both men and women. Article X envisages equal rights in the field of social and economic life whereas Article XI suggests timely implementation of the principles of the Charter and the Declaration of Human Rights on the part of all concerned states.

The Commission on the status of women, in order to achieve its broad objective, aims at spreading knowledge and understanding of the Declaration throughout the length and breadth of the world. It comes out with a call to those who are concerned for a speedy end to discriminatory laws and social norms.

It is important to bear in mind that the main targets for the second U. N. Development Decade, to be achieved by 1980, are in respect of administration and public life, health and maternity protection, training and employment and last of all, education so as to bring forth equality between men and women as human assets. An assessment of the of the women's contribution in social and economic affairs is, however, urgently called for so as to have a fair idea of their own awareness and interest in bettering their own lot. Also ratification of the relevant international covenants is in the nature of a must for the different states of the world. Incidentally we have to have enactment of suitable national legislation to conform to various international instruments. Large-scale educational programmes should also be undertaken alongside to help the U. N. achieve its minimum targets within the specified period.

It is useful to point out that the Commission on the Status of Women at its eighth session in 1963 adopted a resolution which took account of "the great importance of community development in stimulating the advancement of women." The commission further requested the Secretary General of the U. N. to prepare a report on "the participation of women in community development and the possibility of

increasing the scope and extent of their contribution." Participation of women included involvement in programmes of education and training, of economic development, of raising the level of living and social service by women. Suggested ways in which community development could add to the stature of women included those aimed at raising their civic, political, economic, professional and social status. Particular attention should be focussed on the role of women in relation to other members of the community. Formulation of the suitable policy at the national levels and appropriate action by government and non-government bodies are needed in order to ensure greater participation of women in meaningful community development. With this end in view we have to devise adequate programme for enlisting the support and cooperation of women in such programmes directed towards their home, educational opportunities, leadership possibilities, economic development and cultural participation.

However the fact remains that only a few of the existing international instruments on Human Rights of the U. N. seem to be binding upon all the states, though the world forum is committed to the idea that equality of political rights of women is a complement to the similar equality in their social and cultural rights. In spite of the fact that the Commission on Women Status receives yearly report of conditions of women in different countries of the world, some of the U. N. covenants have not been ratified by some of the countries as yet (India not excepted). The U. N. as a matter of fact sought to launch in 1968 a long-range programme for the advancement of women as an integral part of the Decade of Development with special emphasis on educational and employment opportunities of women. It is interesting to observe in this connection that the Economic Charter of Human Rights has been adopted towards the close of 1974. The Declaration of Human Rights stipulates through article 16/1 that men and women are entitled to equal rights as to marriage and through article 23/2 that every one without discrimination has the right to equal pay for equal work. Article 8 of the Declaration reads, significantly enough—"every one has the right to an effective remedy for the competent national tribunal"—for trying out cases involving violation of rights given him, by law or the Constitution. This stipulates unilateral reference to global tribunals as well as concerned national reference bodies of cases involving violation of Human Rights. This reinforces the case for constituting a regional Court of Human Rights, say in Asia, as well.

The problem facing us is of closing the unfortunate gap between

constitutional pledges and international instruments. The big question is what is the real and effective guarantee of the social rights of women in the relatively backward countries of the world and how to stabilise the universally accepted system of rights on the national plane. Really speaking the success of the U. N. efforts for improving the status of women will depend ultimately on the political atmosphere within the U. N. itself as much as on the relative effectiveness of the U. N. Declaration of Human Rights as a whole. A great deal will also hinge on the degree of excellence of performance of the functional agencies of the U. N. as well as of other independent agencies in the matter of realising legitimate rights of women. There is also the imperative need for speedily incorporating clauses of the Declaration into the respective Municipal Laws. We have to think hard in the matter of educating the peoples of the world and facilitating proper communication across the continents on this. Propagating the cause of women's rights through informal and private agencies effectively throughout the length and breadth of the universe is also called for. A thorough change of priorities at the national levels is moreover urgently needed if we mean to better the lot of women folk. It is a pity that full potentialities of national constitutions are not exploited today to approximate to the goal of Human Rights. We should realise that it is not quite possible to reinforce democratic movements in the world today without special efforts to draw the mass of women into it. The fight against social oppression of women and the efforts at improving their social status (excepting holding seminars and exhibitions) should go hand in hand and all in the interest of international peace and solidarity. In a world which has grown smaller in dimension, we cannot conceive of women's progress in isolation from world peace or the establishment of independence and socialism for all people.

A RARE HOYSALA BRONZE

G. C. CHAULEY

The Hoysālas were petty chiefs under the Chalukyas in ancient Kanārā Deśa, i. e. in Mysore State. During the heyday of the Chalukyas one Bīṭṭideva, chief of the Hoysalas became powerful and appears to have made an attempt to throw off the imperial yoke. The Hoysalas were Jains by religion but Bīṭṭideva was converted into Hinduism in 1117 A.D. through the influence of Rāmānujya, a prophet of Vaiṣṇavism who was a fugitive at the court of Bīṭṭideva.¹ Bīṭṭideva was renamed Viṣṇuvardhana after his conversion and with him the suzerainty of the independent Hoysala dynasty all over, Mysore state started. He was a great patron of art and architecture and during his reign a great impetus was given to the building of temples of Brahminical gods and goddesses and 'Jain Bastis' (Temples).² The most important monument of his time still surviving, though neglected and exposed to all the vicissitudes of a tropical climate for about eight centuries, are the temples of Hoysaleśvara at Halebid and Chinnakeśava temple at Belur, both in the district of Hassan.

The independent Hoysala dynasty ruled over Mysore State for nearly two hundred years from 1110 A.D., the date of the coronation of Viṣṇuvardhana, to 1310 A.D., the invasion of the Muslims by Malik Kafur.³ The dynasty totally disappeared from the history of South India in 1339 A.D. and was succeeded by the Vijayanagara Dynasty. Their last vestiges are still scattered here and there in and around Mysore State. These wonderful temples and sculptures recall to us the glorious achievements of the Hoysalas in the past.

The Hoysala sculpture and architecture heralded a new epoch in the history of mediaeval Indian art. So far as its sculptural quality is concerned, the Hoysala sculpture does not possess the intrinsic value of the sculptures of the Guptas or Palas of North India and Pallavas of South India, but these sculptures are characterised by a rich ornamentation so much so that the form itself is lost in an exuberance of decorative details. The technique is a masterpiece of delicacy and intimate charm reminding one of lac-making rather than of stone-carving. Fergusson, the renowned authority on Indian architecture, is of the opinion that the Hoysala architecture is a 'gem of Indian architecture'.⁴ The superb technical skill that the Hoysala artist has employed in the shaping of huge

bell-shaped pillars is also manifested in another form—in the minute carvings on the sculptures. Their technique is more of a lapidary than that of a sculpture, these prompt us to remark that the Hoysala artist started work like a giant and finished like a jeweller.

The plenitude of the Hoysala sculpture made it prominent in the world like those of the Chola bronzes. Not only in the stone carvings but in the bronze castings also the Hoysala artist reached its perfection, a fact testified to to some extent by bronzes of rare quality found in Mysore State. As the bronze specimens are very few in number, that is why they did not become as popular as the stone sculptures of the Hoysalas.

India had an age-long reputation throughout the world for her bronze specimens manufactured in different periods, though the examples of early Indian bronzes are very rare. The earliest bronze specimen, the famous 'nude' 'bronze dancing girl figurine, was excavated from Mohanjodaro and is datable to c. 2300 B.C.⁵ What happened to bronze casting in the Vedic period (c. 1500 B.C. to 800 B.C.) is not known. In the historical period, the surviving evidences of Maurya and Sunga styles are very rare; these may be attributed to the climatic conditions, but it is clear that bronze-casting was continued side by side with stone-carving throughout the historical period and some of them reached their high-watermark, viz. the Gupta bronze specimen of Sultangunj⁶ and Mirpur Khas,⁷ the Pala bronzes of Nalanda⁸ etc. etc. In South India also bronze casting was prevalent during the Pallavas, Chalukyas, Cholas, Gangas and Vijayanagaras; but so far as the sculptural quality is concerned the Chola bronzes are world-famous.

The aim of the present article is to give in detail a description of a rare Hoysal bronze specimen manufactured c. 13th or 12th century A.D., which is a masterpiece indeed. This is an interesting 'bronze tripod' about one foot high, now preserved in the Chennakesava temple at Belur in the district of Hassan, Mysore State. This wonderful bronze tripod meant for keeping *Charanāmṛta* (sacred water), is an offering of Kumara Lakṣmidhara Daṇḍāñayaka, a Hoysala officer. It is one of the very few metal objects definitely known as belonging to the Hoysala period and illustrates that the art of metal-casting during that period was as much advanced as stone work and that it closely followed the same stone-carving traditions.

Each of the three legs of the tripod consists of three groups of figures arranged in an ascending order thus :—

1. The bottom, that is the foot proper, has three metallic bells in

between which are two human figures—one male and another female—in dancing attitude, similar to those in the stone bracket figures under the cave of the main temple. In between the figures and also linking them up, above extends all round the tripod a fine creeper scroll.

2. Next, comes the pedestal on which stands a dancing female loaded with the usual ornaments ; below, flanked on either side by two heavily ornamented dancing drummers. The same type of ornaments are found in contemporary Hoysala stone figures also.
3. A floral ornamental composition serves as the background of the dancing figure, consisting of two composite animals on both sides of the figure exhibiting the emblem of the Hoysala dynasty,⁹ a roaring lion-like animal with flowing mane and large protruding eyes.¹⁰ Above each of the dancing figures of the tripod on all sides just below the circular band, is a *Kirtimukha* a conventional motive of the religious art of India.
4. Between the creepers and the upper circular band, is a panel of ornamental swans, inset in an outer panel of the *Gannabherunda* figures.¹¹
5. Below, the upper circular band itself has a row of hanging lotus buds which are smaller in size than the pendants in the middle of the arches formed by the same floriated creepers on which the lions are standing.
6. On the flat surface of the circular band is an inscription in old Kannada characters, of Kumara Lakṣmīdhara Daṇḍanayaka. The inscription is in old Kannada language. It runs thus :

‘*Srīcāta Beluḥurada Śrī Vijayanārāyaṇa—Devarāge Śrī-mannmahāpradhānam kumāra Lakṣmīdhara dannāyakaru koṭṭa.*’¹²

Translation :— To the holy Vijayanārāyaṇadeva of Beluḥnra, the illustrious Mahāpradhānam Kumāra Lakṣmīdhara Dannāyaka presented.

Vijayanārāyaṇa is the name given to the main image in the central shrine of the Keśava temple. The image is known as Chinna Keśava or Keśara. Beluḥnura is the name of the modern Belur town.

No date is given, nor any king is mentioned. Palaeographically the characters seem to belong to the end of the 12th century A.D., or the beginning of the 13th century A.D. Kumara Lakṣmīdhara Dannayaka is

evidently the minister and general of Bellāla II, who killed himself on the death of his royal master Bellāla II along with wife and several followers.¹⁸

The weight of the tripod is about 10 kg. The exact significance of *tu* 81 *pa* 50 engraved on the pedestal cannot be determined. If *tu* stands for *tuka* or weight and *pa* for *pala*, then what kind of weight the figure 81 indicates cannot be made out exactly.

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1. Hoyasla Vana : Wiilam Coelho, pp. 263-286.
2. Ibid, pp. 298-300.
3. Ibid, pp. 229-235.
4. *History of Indian and Eastern Architecute* : Fergusson, p. 443.
5. *Survey of Indian Sculpture* : S. K. Sarasvati, P. 16; *The Art of Asia*, Vol. I, p. 15.
6. *History of Indian and Indoneasian Art* : A. Coomarswamy, p. 85.
7. *Survey of Indian Sculpture* : p. 144-145.
8. Ibid pp. 153-154 : *Indion Temples and Sculptures* : Louisric p. 330.
9. 1. It is interesting to note that the motive of the roaring lion, the accepted insignia of the Hoyasala dynasty is found on almost all the Hoyasala temples, even the clock on the roof, projecting in front of the central spire, though it has been displayed on both the sides of the main entrance of the famous Belur Temple.
10. 2. *Hoyasla Vansa*, p. 297.
11. *State Archaeology, Mysore State* 1940 pp. 61-62.
12. Ibid pp. 61-62.
13. Ibid Pp. 62-62.

THE BUDDHA'S GREAT RENUNCIATION AND EVOLUTION OF THE EARLY BUDDHIST PHILOSOPHY

SANGHASEN SINGH

One of the most vexing questions which arises before a student of Buddhist literature while dealing with the problem of the evolution of early Buddhist Philosophy is the Buddha's (to be more precise, Siddhattha's¹) Mahābhinnikkhamaṇa or the great Renunciation. Why did, after all, Siddhattha, in the prime of his life, leave behind the prospects of becoming a king and renounced² his household to enter the life of a homeless recluse? Many explanations have been offered by the scholars and followers of Buddhism. Many among them based their observations on the authority of the Buddhacarita which spoke of the famous event which probably moulded the course of life of the 'Prince' Siddhattha. On the other hand, it seems, the author of the Buddhacarita, i. e. Aśvaghoṣa, had taken this portion of the theme of his famous poem from the Dīghanikāya of the Teravādi-s or from identical texts of other sects, possibly those of the Sarvāstivādi-s. This story has been so popular all along the ages that even most of the modern scholars are tempted to accept it as gospel truth. But if we look into the Pali texts and read in between the lines, we can provide a near accurate story of this event of the early life of the Buddha. One explanation is that he opted for the life of a mendicant as he was of a meditative bent of mind. This fact is substantiated by another event in the early life of the Buddha when he was found meditating under a 'jambu' or rose apple tree while his father, Sudhodana was participating in the plough ceremony in his fields. This can be one of the many explanations but not necessarily the most convincing one. In fact, the solution of this knotty problem is not so simple as it has been generally projected. To me it seems that in order to arrive at an accurate position, we have to evaluate the social processes which were taking place in those days and which had a strong bearing upon the career of the Buddha.

Almost all historians are agreed on the point that sixth-fifth centuries B.C. were distinctive on account of the great social upheavals that were taking place at the time. We see the emergence of the sixteen Mahājanapadas, the rise of Magadha under Bimbisāra and Ajātasattu,

the consolidation of the power of Kosala under Pasenadi (Sanskrit, Prasenajit), etc. It seems, that society was taking from the old and decadent slave system a leap into a new social order. Feudalism was emerging as the new social system throwing into the background the earlier one. These great upheavals—economic, social, political and religious—were indicative of a revolution that was taking place during these two centuries. Under the circumstances, was it possible for a young and energetic man like Siddhattha to be aloof from the social events taking place all around him? He must have decided to jump into the fray like many young men of his time from different quarters. Vardhamāna from Vesāli was another instance. The new ruling classes which were emerging had their own contradictions. It may also be possible that because of the revolutionary situation the inner contradictions of the ruling classes might have become so sharpened that they impelled young men like Siddhattha from Khattiya (Sanskrit, Kṣatriya) origin to forgo all pleasures of life and lead the life of a recluse to organise and mobilise the people for a common cause. A number of evidences can be cited to show that the Buddha's Renunciation was a well-calculated move and had a far-reaching impact on the events taking place around him.

In his first sermon known as the Dhammacakkapavattana Sutta, the Buddha declared that there was dukkha or suffering and the removal of that suffering was the goal of every individual. We find evidence in many texts that the religious leaders in those days prescribed many methods for the attainment of the goal. The Buddha, on his part, asked his disciples to avoid the two extremes which were possibly very popular in that region at that time. These two extremes were: the path of excessive self-indulgence and the path of self-mortification. The Buddha, as the story of his life available to us eloquently suggests, discarded these two extremes and pursued the middle course. After his first sermon and when the Sangha (the Fraternity of Buddhist monks) grew into an organisation of sixty-one Arahants (Perfect beings), the first thing which the Buddha asked his disciples to do was to move from place to place and preach the Dhamma (the Law) "for the good of many and for the happiness of many."⁹ This statement of the Buddha clearly shows that he was highly concerned with the type of suffering which the people in general were afflicted with. The human being was extremely important for him. It is a known fact that he underwent many a hardship in order to arrive at this realization. For this, as mentioned above, he had renounced the prospects of becoming

a king, declined leadership of many well-established religious orders,⁴ the offer⁵ of commandship of Bimbisāra's powerful army and so on and so forth. For him there was nothing higher and nobler than man. When the Buddha saw people suffering under diverse miseries, he strove hard to find out the path which could remove the suffering. Six years of hard penances, and continuous meditation for months together were all directed to find a solution to the problem of dukkha. The Buddha claimed after his enlightenment that he had found that solution and hence his insistence on his disciples to follow him and remove their dukkhas. Thus in his first sermon through which he taught the fundamental truth that there was *dukkha*, he asserted that there was a cause of that dukkha and a way to the cessation of that dukkha. He further made it clear to his disciples that each individual had to attain his deliverance for himself. The Tathāgata was only a path-teller for them.⁶ They should not depend upon him for their liberation. The Buddha, in fact, did his best to arouse confidence in the minds of his disciples so that they themselves should achieve liberation and need not rely on others. This spirit of early Buddhism is in sharp contrast with the later Buddhist standpoint where the concept of the Bodhisattva is stretched so far that he himself stands guarantee for the liberation of all beings⁷. In fact, in the Bodhicaryāvatāra, the Bodhisattva is shown taking a vow that he would not strive for his own liberation till he has liberated all living creatures. Secondly, the concept of transfer of merits for the liberation of others was also developed in course of time in later Buddhist literature. This obviously relegated the personality of man and his strivings to a secondary place. The concept of Pāramitās (stages of achievements) developed in early Buddhist literature was also pushed into a secondary position and the idea of the individual's own effort to attain Buddhahood became diluted with seeking grace and favour from the presiding Buddhas in various Buddha-kṣetras (Buddha-regions). In Mahāyāna this trend developed to such an extent that even some of the Pāramitās were deified and worshipped. Prajñā happens to be one of them.⁸

We find many references in early Buddhist literature that the Buddha had made it clear time and again that if one pursued the path trodden by him without giving way to the above mentioned two extremes, he was sure to attain the summum bonum of life, i. e. Arahantahood. Once one becomes sotāpanna (stream-reacher), he is sure to attain Arahantahood sooner or later. He cannot revert back to his earlier position. The four stages of sanctification defined in early Buddhism make this

quite clear. As it happens with all religions, in course of time this goal of life was not accorded due importance and a new goal was set for the satisfaction probably of the more sophisticated and intellectually the more highly-equipped disciples of the Buddha. This was termed Nibbāna which became popular as Nirvāṇa in Sanskrit Buddhist Literature. The simple definition of the term Nibbāna, or removal of bāna or desire, i.e. desirelessness in early Buddhism was replaced by a more complicated definition with its derivation with ni+vr, i.e. to get extinguished.

As referred to earlier, in the first Sermon itself, the Buddha elaborated upon his doctrine of the Four Noble Truths (Cattāri Ariyasaccāni). He emphasized the efficacy of the Middle Path spelt out as the Noble Eight-fold Path which is, in fact, the Fourth Noble Truth. This path leads to the cessation of dukkha, the first Noble Truth, the second being the origin or cause of dukkha and the third the cessation of dukkha. In this respect, the Buddha has been likened to a physician who successfully diagnoses the illness of a man.

The Buddha had very often summarised his teachings in the following way, "Not to commit evils, to perform good deeds and to control the mind. These are, in fact, the essence of Buddha's teachings".⁹ On another occasion, the Buddha spoke of the main purpose of his teachings as follows, "Monks, this life of mendicants under the Buddha (Brahmacariya) is not for gains, privileges or fame, not for the attainment of good conduct, nor for the attainment of samādhi or meditation, nor for knowledge. This is for the liberation of the mind, this is the essence, this is the end."¹⁰ Thus, it seems, the Buddha was more concerned with providing his disciples with training which could help them reach the goal of life. Attained mind, according to him, was a surer guide to the path of salvation than any thing else.¹¹ The Buddha was convinced that ritualism of any sort was against the path of deliverance. He, therefore, opposed the Vedic sacrifices which relegated genuine effort on the part of man to an inferior position. The sacrifices were conducted by priests and the seeker of the goal did not play an active role. Instead of belief in supernatural powers, the Buddha advised his disciples to use their own faculties of mind and rationalise things before accepting them. Once the Kālāmas of Kesaputta-gāma asked the Buddha about the genuineness of the various doctrines propounded by the many religious leaders who visited their township and spoke highly of their own doctrines but despised those of others, he advised the questioners to use their own faculties and judge the statements of others on the anvil of their own experiences and to accept them if they (those doctrines) happened to be for their good

and happiness.¹² The Buddha forcefully rejected the authority of the Scriptures. He advised his disciples to rely upon their own intellect rather than on hearsay or the words of saints and sages. The point thus emphasized is that man is master of his own destiny, none else can be his master.¹³ Man is his own shelter, none else can be his shelter.¹⁴

The Buddha is often accused of painting the picture of this universe so dark that he could see nothing else, but sorrow all around. He is even supposed to have said that the amount of tears shed by the people from time immemorial was more than the water in the four great oceans.¹⁵ Here a very significant point to be discussed is that while analysing causes of sufferings, the limitation of the Buddha had been that he tried to see their causes in the individual life of the people. He could not seek the causes in the realm of social institutions and practices. He thought that the root cause of sufferings was individual cravings and desires of the individual. He illustrated it by saying that in order to save oneself from thorns, it was not necessary to cover the whole earth with skins, rather it sufficed to cover one's own feet. That is to say, he sought the remedy for sufferings in the individual action of people, not in their collective actions. He could not see the simple truth that the sufferings were due to the collective action of the ruling classes and hence collective actions were required to remove them. A number of evidences can be cited to prove that he was convinced of the evils of private property, but could not raise his voice against it as he sought alliance with the rising feudals, traders and bankers, the real ruling classes of his times. He tried to limit his experimentation in the life of the Sangha where not a single member was allowed any private property, except a few daily requisites like a needle, a pair of garments, etc. The life in the Sangha was, in fact, reminiscent of primitive commune life, which was getting obliterated fast from the scene.

The whole philosophy of the Buddha is embodied in the terms *Anicca*, *Dukkha* and *Anatta*, i. e. Transitoriness, Suffering and Non-soulness.¹⁶ The Buddha speaks of the personality of man in terms of five *khandhas* (Sk. *Skandhas*) or aggregates. These aggregates, according to him, are "transitory, constituted and dependent-originated, and of the nature of decay, decrease and cessation."¹⁷ They are not eternal. They undergo constant change. This theory of change is one of the fundamentals of the philosophy of the Buddha. There are no exceptions to it. The *Aniccavada* of the Buddha does not speak of external change of any eternal object, it speaks of the cessation of one object and the origin of an altogether different object. The Buddha did not believe in the constant

continuity of cause and effect, but, in fact, he believed in the discontinuous continuity of cause and effect.

The Upaniṣadic teachers at the time of the Buddha or slightly before him were fully engaged with the idea of the soul and were propagating it vigorously. On the other hand, the materialists of his time and earlier were totally negating the existence of the soul. The Buddha did not accept these positions. He repudiated the position taken up by Brahmanism and at the same time did not accept the line of the materialists. The non-soul doctrine of the Buddha was not a negative phenomenon, but a positive one. The anatta (Sk. Anātma) or non-soul doctrine of the Buddha was non-eternal and positive. This position of the Buddha can be substantiated by the Cūlasaccaka Sutta.¹⁸ Where the Buddha is recorded to have said, "Rūpa is anatta, vedanā is anatta, saññā is anatta, saṅkhāra is anatta, viññāṇa is anatta, in short, all elements are anatta." The Buddha did not accept the annihilationist position of the materialists, but, on the other hand, accepted the concept of rebirth and life hereafter. That is to say, he did not agree with the materialists that the life process ends here in this life. According to him the life of a recluse was possible only when one was convinced that the actions, good or bad, done in this life generate their consequent results in the life after death. For a person who considers body and soul identical, this (life of a recluse, brahmachariya, sāmāñña) was useless as there was no life hereafter for him and hence there was no possibility of any reward after death. Therefore, the best course for him was to enjoy life as much as possible. On the other hand, for one who considers body and soul as two separate entities, the life of a recluse is meaningless, as the soul for him is eternal, unchangeable and immutable. In such a case the brahmachariya will have no impact on soul.

The Buddha denied the existence of God (Pali, Issara, Sk. Īśvara).¹⁹ We have already seen that in his scheme of things, i.e. in the theory of Paticcasamuppāda or dependent-origination, there was no possibility of any supernatural being. Normally, by the word God it is connoted that there is a being who is eternal, permanent, unchangeable, who is the creator, protector and destroyer of this universe. According to the Buddha all elements are dependent-originated. If God is accepted as dependent-originated, he loses his Godness completely, for the concept of dependent-origination and Godness cannot go together. In the Pāthika Sutta and Kevaṭṭa Sutta, the Buddha is shown

as ridiculing the position of God and declaring that belief in God is not compatible with reason. In the *Brahmanimittaka Sutta* of *Majjhimanikāya* the Buddha says that due to ignorance one considers the *Brahmaloka* (the realm of God) to be eternal, permanent and immutable. In the *Tevijja Sutta*, the believers in God are equated with blind men in a queue where neither the first one can see, nor the one in the middle of the queue, nor the last one.

The author of the *Milindapañha* takes up all these philosophical problems and explains them in the most lucid manner. Similar problems have been studied by innumerable Buddhist scholars in later centuries. Śāntideva, the author of *Bodhicaryāvatāra* defines the essence of life in terms of doing good to as many beings as possible.²⁰ The same spirit is found to be running through the writings of ancient, mediæval and modern Buddhist authors.

In their own ways, the modern Buddhist writers and protagonists of Buddhism such as Dhammanand Kosambi, Acharya Narendra Deva, B. R. Ambedkar have shown their concern for the removal of suffering from the life of man in the light of contemporary social problems. The degree of their success is related to the degree of their appreciation of these problems both of which have been minimal.

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2. The philosophy of renunciation was quite unknown to the earlier Brahmanical literature. It seems, the concept of renunciation originated among non-Aryans and was common among them at the time of the Buddha.
3. *Bahujanahitāya bahujanasukhāya*. Cf. *Mahāvagga*.
4. Cf. *Mahāvagga*. *Saṇjaya*, the former leader of *Sāriputta* and *Moggallāna* had made such a offer.
5. Cf. *Padhāna Sutta*, *Suttanipāta*.
6. *Akkhātāro Tathāgatā*.
7. Cf. *Bodhicaryāvatāra*.

8. Cf. Prajñā Pāramitā Literature.
9. Cf. Dhammapada
10. Cf. Majjhimanikāya, 1/3/9.
11. Cf. Dhammapada.
12. Cf. Aṅguttaranikāya, 3/7/5.
13. Cf. Dhammapada. Attā hi attano nātho, ko hi nātho paro siyā.
14. Cf. Mahāparinibbāna Sutta
15. Cf. Saṅyuttanikāya, 14.
16. Cf. Aṅguttaranikāya, 3/1/34.
17. Cf. Mahānidāna Sutta, Dīghanikāya
18. Cf. Majjhimanikāya, 1/4/5.
19. The word 'Brahma' has also been used in the sense of God in early Pali literature.
20. Cf. Bodhicaryāvatāra.

GIORGIO MORANDI—MAN FOR ALL SEASONS

SAMUEL S. BICHFORD, JR.

After World War II, while men were shocking even themselves with hitherto unsuspected ways of lacerating the human flesh, in Korea, in Biafra, in Bangladesh, in Vietnam, Giorgio Morandi, Italian painter (1890-1964), was bringing to fruition his drawing of domestic implements: cups, pitchers, pestles, mortars, petri-dishes, bottles, caraffes. At the time when other men were nourishing racial animosity and violence, Giorgio Morandi was mixing paints. As large portions of mankind were suffering the effects of drought and malnutrition, Giorgio Morandi lived austere. While men in positions of authority were purveying armaments, Giorgio was studying the spectroscopy of colors.

In short, Giorgio Morandi was addressing the question whether life is rudely meaningless or whether it is controlled in a manner beneficent to human beings. In the assemblages of vessels he depicted again and again in varying moods and tones, Morandi consistently addressed this, the central question in life for mankind, and he strove above all to portray it in its affirmative aspect. Few other human beings, be they never so eminent in whatever regards, have made an offeratory equal to this of Morandi in fidelity and totality of commitment. Through his paintings, he sought to intimate the justice and stability we yearn for in our lives, but which strangely seems to be missing. He devoted his energy to the celebration of an eternal and immutable order that he, in common with the ancients, suspected to pervade and underlie all things. In his quest to reassure his contemporaries of the existence of this transcendent order, capable of being perceived in the most mundane items, Morandi charged the subjects of his art with metaphysical splendor, causing them to be almost literally transubstantiate. Order, purpose was an article of religious faith to Morandi, and he produced a lifetime of artistic munificence in the service of his creed.

In the end, of course, Morandi's enterprise of transmutation was a failure. It failed because he, as any mortal creature and despite his technical virtuosity, lacked the power to render a definitive solution to the query he was raising. Does God exist? Does he love mankind? Does he control events for the welfare of His creatures? Death alone possesses the elixir for this enigma, however ardently one believes in a

particular explanation. Moreover, the response Yes becomes ever more difficult to put reliance in, especially in competition with the scenes which by now have become characteristic of the modern period, of oriental children shown on television with an arm blown off ; of emaciated derelicts languishing in Asia ; of disease and poverty in Africa and Latin America. The bottles of neutrality would be an enviable luxury to-day, if only they could pertain.

The one disappointment attendant with Morandi's art is that he could not be God for us. His rendition of significant extra-materiality, despite the supreme talents he used to evoke it, is finally unconvincing. In his reverence for the subject, he contrived arrangements and dispositions that, admittedly, must be accounted artificial. The exquisite touches of light and color with which he thought to accent them notwithstanding, they are eventually perceived by the observer for what in fact they are : trusts, assertions, not proofs ; prayers that lack verisimilitude. In technical respects, on the other hand, Morandi's works constitute a penultimate achievement. The genre of the still-life reached its culmination in the career of Morandi. The mystical framework of life that he hoped to indicate through analogy to bottles and cups, through redaction after redaction of basically the same objects, for hundreds of paintings, glints through the oil as it were, if not in the event depicted. Trader in pewter and cream : Morandi was the quintessential chemist, especially in the paler shades. His hallmark was a serene composition, of which a byproduct of his missal to order was a long and majestic gallery. To look at a Morandi still-life is often to feel a renewed sense of appreciation for the world once again.

At times, so masterful in themselves are the plastic effects in Morandi's works, one wonders Giorgio ever wished to be definitive at all. If one considers a Still-Life of 1948 (oil on canvas, 45 x 40 cm, collection A. Giovanardi, Milan), for example, one detects traces of a consciousness resigned more than hopeful, ironic as well as suggestive. The borders of the objects shown in this work are vague, indistinct. The drawing itself is tremulous, imprecise : as if the objects are under-water, have been leached of their original color ; and one is standing above, looking down upon them through distortion. Why does Morandi choose to paint bottles, one asks, and why are his colors so spectral ? Why does he never draw people ? Is it because deep down Morandi was a pessimist, and he took an inordinate pleasure in showing what remains after the human beings have departed—bottles, effluvia, that stand enigmatically on

dressers of sea and, like shells, are in time blanched of their color and consistency ?

Indeed, in this *Still-Life* of 1948, the objects appear already to be fading. The demarcations between dish and wall have begun to merge ; it is no longer clear where one ends and the other begins. The usually-accepted forms are receding, and what they are giving way to is not yet determined. The hues are attenuated, chalky, gray. The people are absent, and their implements are in this instance rapidly decomposing. Background and foreground are virtually one uniform expanse, physical structure, as in a colloid, having been suspended. Can this be a Mass of reaffirmation of a fundamental meaning or order that perdures despite the sensation we have of loss and dissolution at every hand around us ? If so, it is as stark and incomprehensible as the actual life we know.

No, Morandi was not God, nor did he wish to present the Viewer with a facile eucharist concerning a world that obviously contains as much cause for despair as hope, of which pain and defeat is as integral a component as tranquillity. This *Still-Life* of 1948 is a despised thing, which weeps make-up from its shelves to mourn its salient temporality. It is characteristically mute, static, and serene, but for all that conveys a sense of trauma ; and its orderliness, its neat propriety is of the nature of a bereavement or a violation. It is true that a faint residue of structure, transparent, immaterial, seems to cohere along its lines, but one cannot be certain. The pattern is equivocal ; its presence is not conclusive. If it is meant to be perceptible, its influence is eclipsed by the quality of surface powder that is the most admirable feature of this work. As a critic did not fail to remark, Morandi loved "*la polvere che lascia accumulare sugli oggetti*"¹ ; but by now it occurs to one to ask whether this trait also was not actually a diversion on the artist's part, particularly towards the end of his career. The exact nature of Morandi's conception of reality, what might fairly be termed stratification or 'transference',² is not easily characterized. The world climate was depressing since Korea, and the flesh was tiring.

"Esprimere ciò che è nella natura, cioè nel mondo visibile, è la cosa che maggiormente m'interessa," said Morandi in an interview in 1957. Critics have assayed the oeuvre of Morandi's genius, as well as something plastic can be interpreted in words. Morandi, said Marco Valsecchi,³

inizia una 'pittura bianca', tutta immersa in una aria luminosa che la permea senza residui ombrosi, in una proporzione

arminiosa che presuppone un affetto inesauribile nel suo sereno accento.

"Fu Giorgio Morandi." wrote Werner Haftmann, "che realizzò in forma visibile l'idea della seconda realta, racchiusa nella solidità della cosa."⁴ Public attention as well as scholarly has come to Morandi's art in recent years, although he strenuously sought to avoid it while he was alive. In explicating his works, writers have invoked such descriptions as 'ostinamente fidele',⁵ 'una colorazione morbida',⁶ 'la convinzione della stabilità essenziale della condizione umana verificata',⁷ una poesia che è contemplazione rarefatta⁸; nor are these expressions in the least gratuitous. Appreciative minds have been seeking thereby to transliterate what, in Mr. Haftmann's phrase, is chiefly associated with Morandi and which constitutes the especial validity of his contribution, "the notion of a second reality, concealed within the apparent solidity of things." Perhaps this was the superstructure hinted in the Still-Life of 1948 mentioned above, which however the observer cannot be confident of having discerned. In any case, a painting which consists of an assortment of bottles, cups, and similar household vessels, grouped harmoniously and colored in somber tints of brown and gray, occasionally yellow and blue, is by now widely recognizable as a Morandi. His delicate colorations (now dessicate as bone, now milky as porcelain, ochre of wood or onyx of glass) form a concordance with his unfailing desire to see harmony in all things, and have earned for his paintings an unmistakable authenticity and a steadily growing attraction. Even the matter of contrivance in the paintings is problematic; for by whatever means, Morandi, *aproposito* St. Anselm, at least demonstrated that ordering was possible. It could both be conceived and effectuated by the craftsman who was looking for those motives. In some viewers, this result causes great spiritual relief, amounting almost to a reconfirmation of God's providence: a beatific vision of the artist, in which the viewer is gratified to participate.

Did, then, Morandi succeed in apprehending on canvas the indelible order that was the constant theme of his art? As we have remarked in connection with the A. Giovanardi Still-Life of 1948, his success was inconclusive. In certain of his works, such as those of the phosgenic turquoise bottles in the Still-Lives of 1957 (collection L. Vitali, Milan), Morandi would seem to have exposed as much of God's immanent sheen, should such a thing exist, as one might gracefully expect an artist to do by means of finite materials. Ultimately, however, the value of

Morandi's accomplishment resides not in his having rendered a completely satisfactory account of nature or not, but in his emphasizing the unfathomable matrix in the midst of which, guided or chaotic, all living creatures will sooner or later, and for eternity, become enmeshed. Conducting his own life in a thoroughly constructive fashion, he urged others to bethink themselves of the unifying commonality in all things, however humble: the intuitive paradox that a compassionate outlook may disclose, inhering amid affixed noncomprehending objects, the priest's unseen hand of God and the art critic's 'second reality', lying just beyond and never forsaking the immediate, externally visible one. "To express what is in nature, which means in the visible world," said Morandi, "that is what concerns me." In the process of doing so, Morandi helped mankind to look again, and to see with hope. As long as his paintings are able to be viewed, his peaceful example will endure as an encouragement to the living that they eschew barbarism and concentrate instead on cooperation, nonviolence, and contemplation of God's ineffable plan, which he believed could be evidenced within even the most drab of circumstances.

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The complexities regarding what the relative merits of art are difficult to adjudge. Particularly in the face of problems so abysmal as obtain in our world today, racial antagonism, genocide, weapons profiteering, malnutrition, the practicing of still-life would seem to be of little efficacy. Nevertheless, the career of one man of our era, laboring quietly in the realm of art, warrants a place among the highest testimonials of human faith. The creations of Giorgio Morandi, modest Italian painter, mark an advancement in the development of world culture akin to Christ and the doctrines of the East. His production coupled with the example of his lifelong dedication to peaceful endeavor deserves for his memory, more truly than for any man's since the age of St. Thomas More, the noble epithet Man for all Seasons. The paintings he left behind beautify the often dismal surroundings in which many men are obliged to spend their earthly sojourns, and the suggestion of hope they impart offers solace to a humanity that is today acutely in need of guidance.

Our world today does not need boastful attitudes, new weapons, grotesque armies; it needs harmonious attitudes, more food for human beings, and the paintings of Giorgio Morandi. Let us pray that the spirit of this true gentleman's art may permeate across boundaries

and divisions before the already greatly distorted human form is reduced to mere starvation, haemorrhage, and dust—*Guernica* on a universal scale. For one wonders how much more sacrilege the alleged image of God, the only standard for sanctity man has to go by, can sustain until it begins to transmute (so far from being art) into a veritable obscenity.

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THE CONCEPT OF IMAGINATION IN SANSKRIT POETICS

JOGESH CHANDRA BHATTACHARYA

While discussing any principle of literary creation we may go over to Sanskrit Poetics, for Sanskrit Poetics is enormously rich in its conclusions. Besides, the fundamental similarity between European and Indian Poetics makes us all the more convinced that the main principles behind artcreation are co-eval with the spirit of man to whichever clime or country he might belong. They are age-old and eternal, so long as human nature remains as it is. The Romantic Theory of Imagination in England again has its special lines of contact with our ancient theory of Imagination in Sanskrit Poetics.

The creative faculty in man is called 'प्रतिभा' (Pratibhā) in Sanskrit. प्रतिभा is defined as "नवनवोन्मेषशालिनीबुद्धिः प्रतिभेत्युच्यते बुद्धेः" i.e., the faculty of creating ever new things. This creative faculty in man is at its highest in poetry where the power of creation is called अपूर्ववस्तुनिर्माणक्षमा प्रज्ञा" (*Dhvanyāloka* : I: 6. Commentary), i.e., the power to create something entirely new, something which had no existence before. The poets actually can give to "airy nothing a local habitation and a name". This does not, however, mean that poetry or literature is entirely cut off from the basis of the factual world. As a matter of fact, Sanskrit dramas and epics in ancient India, like the Shakespearean dramas, were almost without exception, based on well-known characters in real life. And yet the poets had their own standards of beauty and truth. They were never bound down by too much stress on the details from real life. This leads us to one of the fundamental principles in the world of Art that poetic truth need not necessarily tally with the factual truth. This has been recognised in the following words of Ānandavardhana, a 9th century aesthetician of Kashmir in his *Dhvanyāloka*, a treatise on Poetics :

अपारे काव्यसंसारे कविरेकः प्रजापतिः ।

यथास्मै रोचते विश्वं तथेदं परिवर्तते ॥

(Chapter III)

The *Agnipurāṇa* tells us the same thing :

अपारे काव्यसंसारे कविरेकः प्रजापतिः ।

यथा वै रोचते विश्वं तथेदं परिवर्तते ॥

(345. 10)

[In the vast and limitless world of poetry the sole creator is the poet. He changes and transforms the universe according to his own choice.]

The idea of the gift of poetic creation in Sanskrit Poetics accords very well with the Western Romantic Theory of Imagination. Imagination according to the Romantics is the complete faculty of literary creation, mystic in its origin in the sense that it is a gift from the most High God and cannot be acquired in the work-a-day world although constant application may brighten it, leading literature to an ideal place as distinguished from the plane of mundane reality, and including reason as well as emotion within itself. The basic assumption that runs like an undercurrent throughout Sanskrit Poetics is that the faculty of creation is a divine heritage of man. So long as God remained One, there was no creation. But, as the Upanisads tell us, God wanted to be many, because he wanted to realise and taste his own identity through the endless variety of his creations. In other words, He wanted to be many. "एकोऽहं बहु स्यां प्रजायेय इति" (*Taittiriya Upanisad*), i.e., "I am One, but I shall be many, I shall be born." This desire on the part of the Creator gave rise to the creation of the Universe. It is this urge of realising one's own self in others, of sharing our own thoughts and feelings with other human beings, which is behind the creation of Art. Why did literature originate at all? It was because man was not satisfied with merely multiplying himself in his biological existence, but he also wanted to live eternally in the emotions and feelings of the rest of humanity. The idea is very finely expressed by Tagore in his essay "Sahityer Sāmagrī" ("Materials of Literature").

Human feelings endeavour to impress myriads of minds through years and years. It was due to this earnest desire that from time immemorial we have so many gestures, so many languages and alphabets, innumerable carvings on stones, melting on metals and binding in leather, how many marks and signs on the barks and leaves of trees, on paper, with the brush, the pointed stick, the pen, how many attempts at writing from left to right, from right to left, from the top to the bottom, from one row to another: Why? Only because, what I have thought, what I have felt must not perish; it must flow on from mind to mind, from time to time. Being thought out and felt. (Rendered into English from the original Bengali).

The famous theory of *Rasa* in Sanskrit Poetics shows us the importance of the faculty of the poetic Imagination. Literature has been defined by Viśvanātha, one of the most eminent writers in Sanskrit Poetics, as “वाक्यं रसात्मकं काव्यम्” (*Sāhityadarpanam*, Chapter I). It means that a composition having *Rasa* as its soul is called ‘काव्य’. Here of course we should note in passing that काव्य which literally means a poet’s work, has always been used in Sanskrit Poetics, in the sense of literature as a whole. This, again, by the way, is a point of similarity with European Poetics where the term Poetry so often includes the entire range of literature. The term *Rasa* has been explained by Viśvanātha as “रस्यते आस्वाद्यते इति रसः”—*Rasa* is something which can be relished.

The word *Rasa* in Sanskrit may be used in so many different senses. It signifies any liquid in general. The quality of being relished through our physical sense of taste is also *Rasa*, and as such it may be of six different kinds : sweet, sour, saline, alkaline, bitter and pungent. In medical science in India it also refers to the digestive and other glandular secretions. In Poetics, however, the relishing is never purely physical. It has a highly technical sense which we shall discuss presently.

Viśvanātha, in Chapter III of his treatise *Sāhityadarpanam*, explains *Rasa* in the following verse :

विभावेनानुभावेन व्यक्तः सञ्चारिणा तथा ।

रसनामेति रत्यादिः स्थायिभावः सचेतसाम् ॥

The permanent emotions like the Erotic feeling in the heart of a fit appreciator are transformed into the *Rasa* state through the agency of the *Vibhāvas*, *Anubhāvas* and *Sancārī Bhāvas*.

Abhinavagupta, a most authoritative scholar of the 10th Century A.D., and the commentator of the *Dhvanyāloka*, defines *Rasa* in the following manner :

शब्दसमर्प्यमाणहृदयसंवादसुन्दरविभावानुभावसमुदितप्राङ्निविष्टरत्यादिवासनानुराग-
सुकुमारस्वसंविदानन्दचर्वणव्यापाररसनीयरूपो रसः ।

(Commentary on the *Dhvanyāloka*)

Rasa is the relishing of the delightful consciousness of one’s own. The causes and effects of our emotions in real life assume a completely new shape when they are revealed through the words of the poet. In this new shape they are called *Vibhāva* and *Anubhāva* respectively, and they develop a power to appeal to all hearts. These *Vibhāvas* and *Anubhāvas* in their turn arouse the emotions (e.g., the erotic) which are

already there in the heart of the reader, and the consciousness becomes enjoyable as it is tinged with such emotions.

Anything in the objective world which arouses emotions is called *Vibhāva* when it is placed in poetry and drama :

रत्याद्युद्बोधका लोके विभावाः काव्यनाट्ययोः ।

(Sāhityadarpaṇam Chapter III)

Vibhāvas are of two kinds : *Ālambana* and *Uddīpana*. When a man is attracted by a woman amidst beautiful natural scenery, moonlight and fragrant breeze, the man and woman are *Ālambana-Vibhāvas* to each other. The natural scenery and such other accessories are the exciting causes or *Uddīpana-Vibhāvas* in this particular context.

The external manifestations like gestures and postures through which any emotion is expressed in literature are called *Anubhāvas*. Thus, amorous glances of a lady to her lover expressed in literature are to be called *Anubhāvas*.

Viśvanātha also recognises some minor emotions or *Sañcārī Bhāvās* in literature. These, however, cannot exist all by themselves, but have to depend on the permanent emotions.

The permanent human emotions according to Sanskrit rhetoricians are : the Erotic emotion, Laughter, Pathos, Anger, Endeavour, Fear, Repulsion, Wonder and Calm. Any of these nine permanent emotions, transmuted by the *Vibhāvas*, *Anubhāvas*, and *Sañcārī Bhāvās*, attains to the state of *Rasa* or pure aesthetic enjoyment which is capable of being relished.

The *Rasa* theory is very ancient in India, We come across discussions on *Rasa* in the very ancient book of Dramaturgy written by the sage Bharata. We have no means of ascertaining the exact date of Bharata's *Nāṭyaśāstra*. Without entering into the niceties of researches on this issue (which is beside the point for our purpose), let us accept the date of Bharata as given by Mahāmahopadhyāya Haraprasād Śāstri as the 2nd century B.C.

According to Bharata, too, the main object in literature is the creation of *Rasa* which is produced by a combination of *Vibhāva*, *Anubhāva* and *Byabhicārī* (or *Sancārī*) *Bhāva*.

न हि रसादृते कश्चिदर्थः प्रवर्तते । तत्र विभावानुभावव्यभिचारिसंयोगाद् रसनिष्पत्तिः ।

(Nāṭyaśāstra, 6. 34)

According to the nine permanent emotions of the human heart *Rasa* has been divided by Viśvanātha into nine categories :-

शृङ्गारहास्यकरुणारौद्रवीरभयानकाः ।

वीभत्सोद्भुत इत्यष्टौ रसाः शान्तस्तथा मनः ॥

(Sāhityadarpaṇam, Chapter III)

Bharata recognises eight Rasas and excludes 'शान्तरस' or Calm from his list. This, however, is no fundamental difference, for Bharata deals only with drama, and drama, which is mainly a clash and contrast of different personalities, does not generally have the note of Calm as its most predominant Rasa throughout the drama, although it should be there at the end. Besides, 'शान्तरस' may not be considered as a separate Rasa at all. It is a synthesis of all other Rasas where all the other emotions have been absorbed and harmonised into one whole. This is the state of the Yogis whose minds are always in a state of equanimity. It is for this reason that Bhattatauta, a teacher of Abhinavagupta, in his *Kāvya-Kāutuka* regards the *Śānta Rasa* as superior to all other *Rasas*.

Rabindranath Tagore explains the theory of *Rasa* in the following manner :

Our emotions are the gastric juices which transform this world of appearances into the more intimate world of sentiments. On the other hand, this outer world has its own juices, having their various qualities which excite our emotional activities. This is called in our Sanskrit Rhetoric *Rasa* which signifies outer juices having their response in the inner juices of our emotions. And a poem, according to it, is a sentence or sentences containing juices, which stimulate the juices of emotion. It brings to us ideas, vitalized by feelings, ready to be made into the lifestuff of our nature.

(What is Art ?)

When an emotion is thus raised into the *Rasa* state through the power of creative Imagination of the poet, it loses its individual character and becomes dissociated from such conditions as might have led us to any motivation. It becomes impersonal and universal. It is this impersonal character of the creation and enjoyment of *Rasa* which has been emphasized by Viśvanātha in the following lines :

सत्त्वोद्रेकादखण्डस्वप्नकाशानन्दचिन्मयः ।

वेदान्तरस्पर्शशून्यो ब्रह्मास्वादसहोदरः ॥

(Sāhityadarpaṇam, Chapter III)

The enjoyment of literature is akin to that of the Absolute where the distinction between the knower and the knowable vanishes altogether.

It is a state of rapture where we are lifted up for the time being from our "sole self," our trammelled everyday-existence.

We have already referred to the concept of Ecstasy where we have noted that poetic Imagination, by producing Ecstasy, becomes a great instrument of moral good. The theory of Rasa also tells us about this Ecstasy produced by the poetic 'प्रज्ञा' or Imagination. We have already stated that a poetic creation becomes impersonal and universal, capable of being relished. But how is it possible for us, asks Viśvanātha, to feel pleasure or pain with Rāmacandra and Sitā while reading the *Rāmāyana*, when their delight or sorrow does not concern us in any way? How do the feelings of a particular man or woman become universal?

ननु कथं रामादिरत्याद्युद्बोधकारणैः सीतादिभिः सामाजिकरत्याद्युद्बोध इति, उच्यते—
व्यापारेऽस्ति विभावादेर्नाम्ना साधारणी कृतिः ।
तत्प्रभावेण यस्यान् पाथोधिप्लवनादयः ॥
प्रमाता तदभेदेन स्वात्मानं प्रतिपद्यते ॥

The objects arousing emotions have a function of producing a oneness between the creator or the reader and creation. It is due to this that a right-minded appreciator finds his own self engaged in crossing the ocean like Rāmacandra or Hanūmāna. It is due to this again that even an ordinary man, for the time being, shares in his mind the deeds of a hero. The sympathetic reader has no sense of his own separate self so long as he remains absorbed in the literary creation. The experiences are his and yet not his at the same time :

परस्य न परस्येति ममेति न ममेति च ।
तदास्वादे विभावादेः परिच्छेदो न विद्यते ॥ (Ibid.)

Once, however, his experience at the time of enjoying a literary creation is over, he will come back to his "sole self", his own individual consciousness.

This power of Imagination of producing an identification between the writer or the reader and the object of creation is called 'साधारणीकरण' in Sanskrit Poetics. This 'तन्मयता' (to become that) is essential for the creation as well as for the enjoyment of Art.

Tagore recognises this urge for making ourselves free in literature from our circumscribed day-to-day consciousness as the greatest impulse behind art creation. The Absolute has been characterised in the Upaniṣads as "सत्यं ज्ञानमनन्तं ब्रह्म", i. e., Brahman is the Truth Eternal, the Supreme consciousness and the Illimitable. Following this, Tagore tells us about three different manifestations of the human soul. The

entire human soul consists of 'I am, I know, I express'. Literature, which is an expression of the human soul, corresponds to the IIIimitable aspect of the Absolute. (In the essay *Sāhitya* in the book *Sāhityer Pathe*, p. 21). So long as man remains circumscribed within himself, he is no creator. It is only when he steps out of his limited existence, and tries to be united with others, that artistic creation takes place.

The theory of Rasa tells us that the Imagination gives literature an idealised character. In this, again, the Sanskrit rhetoricians are one with the English Romantics. Of course, the realists might object to such idealization of literature. But, after all, only the real can be the subject of literature. The ultimate product can never be real in the sense of an exact reproduction of the objective world. In that case there would be no necessity of any artistic creation whatsoever, for do we not find enough of real life around us? Art is not escapism, and from that point of view the realist's approach of faithfulness to real life is correct. Art grows out of life, and draws its sustenance from life. Cut off from life, it becomes like a hot-house plant without any vigorous growth. But, on the other hand, there can be no Art unless real life is transmuted by the genius of the poet into a thing of poetic beauty. The theory of Rasa grants full creative freedom to the artist whose Imagination creates something which is at once connected with and different from the world of objective reality. The point has already been touched in the verse quoted from the *Dhvanyāloka* :

अपारे काव्यसंसारे कविरेकः प्रजापतिः ।

यथास्मै रोचते विश्वं तथेदं परिवर्तते ॥

The very idea has been repeated in the following lines of the same book :

भावान् अचेतनानपि चेतनवत् चेतनानचेतनवत् ।

व्यवहारयति यथेष्टं सुकविः काव्ये स्वतन्त्रतया ॥

It means that a great poet may, according to his own law, represent inanimate things as living, and conscious beings as lifeless. Viśvanātha, too, in his *Sāhityadarpaṇam*, advises the poet to reject or alter anything that would be a hindrance to the creation of Rasa :

यत् स्यादनुचितं वस्तु नायकस्य रसस्य वा ।

विरुद्धं तत् परित्याज्यमन्यथा वा प्रकल्पयेत् ॥

Bharata says the same in his *Nāṭyaśāstra* :

न हि रसादूते कश्चिदर्थं प्रवर्तते । तत्र विभावानुभावव्यभिचारिसंयोगाद्
रसनिष्पत्तिः ॥

(*Nāṭyaśāstra* : 6.34.)

And here is Ānandavardhana who says in his *Dhvanyāloka*, Chapter III, that the poet must, in all respects, be guided by his aim of creating Rasa in his creation :

कविना काव्यमुपनिवध्नता सर्वात्मना रसपरतन्त्रेण भवितव्यम् ।

The same chapter also tells us that nothing but lack of propriety is a hindrance to the creation of Rasa :

अनौचित्यादूते नान्यद् रसभङ्गस्य कारणम् ।

प्रसिद्धौचित्यबन्धस्तु रसस्योपनिषत् परा ॥

It is propriety or the inner requirement of Art which is all-important in Sanskrit Poetics for the creation of Rasa. To quote from chapter III of the *Dhvanyāloka* ;

तन्नियमे हेतुरौचित्यं वक्तृवाच्ययोः ।

A literary composition, as the line tells us, should be regulated by the propriety of the speaker and the object of his speech. Not merely this, Ānandavardhana speaks of many other kinds of propriety :

वक्तृवाच्यगतौचित्ये सत्यपि विषयाश्रयमन्यदौचित्यं संघटनां नियच्छति ।

(Ibid)

The sentence quoted above means that even when the propriety of the speaker and the speech is maintained, other kinds of propriety originating from the subject matter regulate the literary composition. In our judgment of any portion of a literary work, we should therefore see whether it is proper and organically connected with the whole. Otherwise the creation of Rasa would be hampered. That this rule holds good not merely in verse, but also in prose, is specifically mentioned by Ānandavardhana :

एतद्यथोक्तमौचित्यमेव तस्या नियामकम् ।

सर्वत्र गद्यवन्धसपि छन्दोनियमवर्जिते ॥

(*op. cit.*, Chapter III)

The paramount importance of the creation of Rasa in literature makes it obligatory on the part of the artist who handles history for his own purposes, that if anything in history becomes detrimental to the creation of Rasa, it may be changed according to his own needs. But the change must be congenial to the desired effect.

इतिवृत्तेवशायातां त्याक्त्वाननुगुणं स्थितिम् ।

उत्प्रेक्षाप्यन्तराभीष्टरसोचितकथोन्नयः ॥

(Ibid)

Bhāmaha, another authority on Sanskrit Poetics, says that the responsibility of the poet is very great. There is no such word, no such object, law or art, which cannot be the subject of the poet's Imagination :

न स शब्दो न तद् वाच्यं न स न्यायो न सा कला ।

जायते यन्न काव्याङ्गमहो भारो महान् कवेः ॥

(Bhāmahālankāra : 5.3)

To quote Bharata again,

न तज्ज्ञानं न तत् शिल्पं न सा विद्या न सा कला ।

नासी योगो न तत् कर्म नाट्यस्मिन् यन्न दृश्यते ॥

(Nāṭyaśāstra : 1.117).

There is no such knowledge, no art, no branch of learning, no Yoga, no work, which cannot be the subject of drama.

The last two quotations prove beyond doubt that the boundary of the poet's creation is Infinite, it may include anything in the universe. There is thus, a great similarity of this with Wordsworth's idea that there are no particular words or subjects ear-marked for poetry. "The poet's eye, in a fine frenzy rolling", really glances "from heaven to earth, from earth to heaven".

Dhanañjaya, another authority on Dramaturgy, glorifies the poet's Imagination by saying that there is nothing which the poet's Imagination is not capable of transmuting into Rasa—whether beautiful, desirable or noble, mean or ferocious or pleasant, mysterious or perverted :

रम्यं जुगुप्सितमुदारमथापि नीचम्

उग्रं प्रसादि गहनं विकृतञ्च वस्तु ।

यद वाप्ववस्तु कविभावकभाव्यमानं

तन्नास्ति यन्न रसभावमुपैति लोके ॥

(Daśarūpaka : 4.85).

Such, then, is the power of the "अपूर्ववस्तुनिर्माणक्षमा प्रज्ञा" or the Imagination.

We should, however, note in passing that although anything unpleasant may be the subject-matter of literature, it must be transmuted into *Rasa* ; it must, in other words, be a thing of beauty and joy capable of being 'relished'. The undue emphasis of the extreme realists on the unpleasant aspects of life cuts at the root of the concept of Imagination

which includes a vision of the whole of life and throws the entire spirit of man into activity. Imagination as viewed by great artists and theorists of all ages, as also by the Romantics, is a reconciliation and harmonisation of all opposites where the beautiful as well as the ugly of the world of reality may all live side by side, being parts of a vast cosmos created by the poet.

The theory of *Rasa* was not something arbitrary to the Indian mind, for the Indians believed in the cosmic harmony of the Universe, and the enjoyment of literature for them was just a fragment of the Absolute and Ineffable Bliss that dawns upon one after one realises the Divine.

In the *Taittiriya Upaniṣad* Brahman alone is considered to be the absolute *Rasa* or *Ānandam*, and a man, knowing the Brahman, becomes Blissful :

रसो वै सः । रसं ह्येवायं लब्धवानन्दी भवति ॥

The Upaniṣads also tell us that Joy was at the root of creation of this entire Universe. God is Bliss and it was from Bliss that the creation sprang up, it is Bliss that holds up the entire creation and it is in Bliss again that the creation will be dissolved :

आनन्दाध्येवं खल्विमानि भूतानि जायन्ते, आनन्देन जातानि जीवन्ति, आनन्दं प्रयन्तपभिसंविशन्ति ।

And one who knows the Bliss that is Divine is completely without fear from anything :

आनन्दं ब्रह्मणो विद्वान् न विभेति

Although it is impossible, the sages tell us, to give an exact characterisation of Brahman, for He can only be felt and cannot be expressed in words, an attempt at characterisation has been there, and the Upaniṣads call him 'सच्चिदानन्द', i.e., Eternal Existence, Supreme Consciousness and Bliss. The Bliss thus experienced in the realisation of the Divine is without parallel and infinitely superior to all other enjoyments in human life. And yet, the enjoyment from literature has an essential similarity with the joy experienced at the Union with the Absolute. That is the reason why Viśvanātha calls the enjoyment of literature ब्रह्मास्वादसहोदरः or a brother to the realization of the Absolute. Every major work in Sanskrit Poetics has an implicit faith that literary creation is a parallel to the creation of the Universe. The Upaniṣads tell us that Brahman is one and without a second (एकमेवाद्वितीयम्) but He is also all pervasive and everything in this Universe is He and none but He सर्वं खल्विदं ब्रह्म. He is Unity Itself, above and independent of all relations. But

just because there is nothing excepting Himself, He has to create the Universe out of Himself in order to relish His own variety. The Upaniṣads tell us about the urge for creation in the Divine Himself.

सोऽकामयत्, बहु स्यां प्रजायेय इति ।

(The *Taittirīya Upaniṣad* : 2. 6).

He desired that though He was one, He would be many. He realises Himself and His Love more fully as it were in his endless creations because it is He who is present everywhere :

एको देवः सर्वभूतेषु गू सर्वव्यापी सर्वभूतान्तरात्मा ।

(The *śvetāśvatara Upaniṣad* : 6. 11).

The urge for creation is thus something which we have inherited from "Our Father" who is not merely in heaven, but everywhere in this Universe, "in the light of the setting sun, and the round ocean and the living air and the blue sky, and in the mind of man". Literary creation according to Sanskrit Poetics is something parallel to the creation of this Universe, although on a much smaller scale. Of course, God creates the Universe out of Himself ; the material for His creation is nothing but Himself. The poet, on the other hand, takes over the materials for his creation ready-made from God's creation. He can only select and reject, arrange and re-arrange things, makes, in the words of Bacon in his *Advancement of Learning*, "unlawful matches and divorces of things". And this, too, is a great creative freedom for the poetic Imagination to have its free play.

The idea that God fulfils Himself in His own creations has found touching expression in many of the songs and poems of Tagore. The Divine, in order to relish Himself, seeks union with the individual souls through eternity :

Āmār milan lāgi tumi āscho kabey thekey,

Tomār Candra Sūrya kothāy rākhbey tomāy dhekey ?

Man has ever his "aspiration after the immense", "the devotion to something afar from the sphere of our sorrow", the mysterious urge to be united with the Universal Soul. The Divine, on the other hand, likes to come down to the human heart for tasting His own Love and Glory. That is why Tagore sings that without myself the Love of my God would not have been complete :

Āmāy nailey trbhubaneśvar

Tomār prem hoto je micche,

Tāi tomār Ānanda Āmār par,
Tumi tāi eseccho nīcey.

The Sanskrit equivalent for the word poet is 'Kabi' which literally means "a seer of truth." The word actually refers to the Divine in the Upaniṣads : कविर्मनीषी परिभूः स्वयम्भूः (*Īsopaniṣad* : 5. 8.). The Gītā also refers to Him in the same manner : कविं पुराणमनुशासितारम् (8.9). The Greek word 'poet', too, as we know, means a Creator. The poet, therefore, is a miniature of the Greatest Creator. And in his created world, the world of literature, he reigns supreme.

We have said that *Rasa* is that which can be relished. Now what actually do we relish in the world of imaginative creation? Sanskrit Poetics tells us that we relish our own liberated consciousness. The consciousness in our dreary intercourse of daily life is limited and fettered by personal interests which serve as a veil upon it. The veil is completely lifted in the experience of the Divine. In the experience of literature too, this veil is lifted from our consciousness for the time being, and then it becomes impersonal and universal. In such a state of mind we experience a oneness with all objects in the Universe and are able, in the words of Wordsworth, to "see into the life of things". It is for this reason that Jagannātha, a great 17th century scholar of Sanskrit Poetics, has described *Rasa* as :

रत्याद्यवच्छिन्ना भग्नावरणा चिदेव रसः ।

(*Rasagādhara* : 1. 6. Britti)

The human consciousness, charged with the erotic or such other emotions, and having its veil broken, is called *Rasa*. Literature has been defined by Jagannātha as :

रमणीयार्थप्रतिपादकः शब्दः काव्यम् ।

(*Ibid*, : i. i.)

Words conveying beautiful meaning will be *Kāvya*. And रमणीयता or beauty has been defined as : लोकोत्तराह्लादजनकज्ञानगोचरता or the ability to produce a transcendental joy far above the ordinary.

That the power of Imagination makes the poet create a joy that is distinguished from the petty pleasures of our day-to-day existence is repeatedly recognised by the English Romantic poets like Wordsworth, Shelley and Keats in their poems as well as critical discussions. The very same idea has been stated by Butcher in his commentary on Aristotle : "The object of Poetry, as of all the fine arts, is to produce an emotional

delight, a pure and elevated pleasure". (*Aristotle's theory of Poetry and Fine Art*, p. 221). The joy derived from an Imaginative creation is "complete in itself, and belongs to the ideal sphere of supreme happiness". (Ibid. p. 202)

The theory of *Rasa* in Indian Poetics, therefore, has made a great contribution in showing the distinctive character of the Poetic Imagination. The Imagination may be fired up and inspired by the world of material reality, but it also transcends its limits, and makes an ideal product which is complete in itself. And in this Sanskrit Poetics is one with the English Romantics.

poems

SOMA ROY

THE BEGGAR

He lay sprawled on the lane—
Crater of molten magma !
Predominance of age, dislocated the mind,
Coins at his feet, rolled into drains of sluggish dreams.
Those marrowless eyes, overflowing with rain,
Swept me off, to the land of feathers.....
Life floated on a raft, on waves flecked with synthetic surf !
The laurel wreath lay in a straw hut.

The blubber of walrus ; crocodiles' flesh ;
Coconuts with peanuts, and a tiny nutmeg of love—

O Sheer mockery !—the soft slumber—
The tulip, the moth, the gleaming windmills—all !
Ghalib sang of the cankers of rose,
My beggar sings of Dream Island.
At dawn, they lifted him on shoulders.

His smelly corpse—
Yet, I dwell on his visionary isle
The dilapidated city of his mind !

WE WOVE DEATH

We wove the web of time,
On wavy sand-dunes,
Vexed weary workers,
Exhausted the trolley of threads.

Death murdered dreams,
Ended hectic fever of life,
And turned down
The martial tunes of strife,
Horn-pipes summoned us to Death !

We wove death
On nocturnal paradise.
Vines untainted with fertilizer,
Embedded between stars.
Dying whispers of mundane world,
Ecstatic squeals of thunder,
Antipathetic pedants created
Tumult and blunder,
Hornpipes summoned us to death.

A PREDICTION

Death—the cadaverous mask of life
Allured the poet, till he reached
The abysmal chasm of despair !
Count the carved, frozen, wrinkles on your brow
Oblivious of Youth's passionate fervour !
Marble statue decomposes to a clod of flesh...
A pot-pourri—a miscellany of thoughts !

Those bats in a sea of honey
Swim with fin-like, wings...
The ideal image,
Chiselled by a modern Pygmalion,
O hideous expression
Of distorted mind—

A miniature beast !

Reason, the burning fetter,
Enchains Imagination,—love-lorn swallow—
Behold—the pedagogue of Art has perished !

SANDCASTLES

Erecting Sandcastles by the sea
And sand pillars on brittle pebbles,
The architect of today
Feels Ecstasy in Self-creativity.

We create shapes in void ;
Weave futile corridors of gossamer,
Delicate dreams of fragile feathers,
Trinklets of transparent hopes.

But sandcastles on sea-beach of the mind
Are swept away, by waves of distress ;
Castles crumble down—a pathetic sight :
The saline tears of a poet !

IN THE ANCIENT CITY .

In dim alleys, beneath every stone crevice,
The tantalizing creature of pre-historic love,
 Conceals its visage—exotic beauty !
Yet, the unperturbed beggar flouts the world,
Hums a ghazal in grief—Aged Tansen !
Facile fingers caress age-old lamentations—
The blubberings of an extinct historian.
When whispers encounter rivals,
The sprinkles of rosy water,
The blood of a lover, swims in visionary pools.
Hark ! A waiting maiden in a niche,
The king of chess, in a coffin—
Love—the frozen chips of wood ;
The shaking minaret falls crashing to the floor.
The furnace in every heart,
 Recollects peace of ancient insomniacs !

MUSICAL EFFECT

In the days of Orpheus,
The lute lulled humanity
With soporific melodies,
But flutes of reeds,
Now sing out of tune—
The spinning orbs vibrate on ribs of a skeleton !
Yet, Chopinesque moods pervade...
The aesthete loves kaleidoscope of geometrical tunes :
Transcendental music emerging from imaginary lyre
Reaches the ambient network of stars bathed in Alabaster.
The shady *ailanto* soothes the senses of an atrabilious Nymph.
The Adagio Symphony trammels up
The serpentine path of life,
Throttles the itinerant pedlar—Death !
The ostracized outlaw—Man,
Finds shelter in the inn of tranquillity.

ON READING THE COMPLETE WORKS OF KEATS

Grave Plato, thou wert wrong !
For such as I am, a mere pebble
In the niche of Reality ;
Drinking a bitter potion of perverted love and ennui
From the cup of brimming agony,
And sinking in waves of anxiety—a rotten carcass of a whale,
Yet do I hear the husky whispers of a nightingale.....
What divine elixir, ambrosial draughts,
Other than the nectar of amnesia
Can charm thus my weary life ?

Art thou a wizard—a bird—
Or a Bard with sensitive lips ?.....
I, a Proserpine, struggling in antipathy,
Clutch thy titbits of beauty—
Endymionic hymns of love,
With claws of modern sophistry.

Art thou garbed in robes of immortality,
Immortalizing the tumultuous breath of humanity ?
Fie for shame, O imps of pain, fury and wrath—
Envious demons of destiny !
Let me dwell, an Isabell,
Beside the Pot of Basil !
Remould me, Hyperion,
I am Lamia of poisoned Earth !
'Tis a moonless midnight.....
The sky—am expressionless screen—
Suddenly I behold, the Brightest Star :
It is he, my poet.
My glorious Pindar !

EDUCATION IN A CHANGING SOCIETY

Address by

SHRI V. V. GIRI

Formerly, President of India

To the University of Calcutta, Wednesday, the 28th July, 1976.

Learned Vice-Chancellor, Students of the Calcutta University,
Comrades, Friends, Ladies and Gentlemen :

I am grateful to your esteemed Vice-Chancellor for having invited me to address the youth studying in your renowned University. This I consider a great privilege which I shall always treasure. The whole country is proud of this ancient citadel of learning and its alumni have made a great name for themselves throughout the world.

I had the proud privilege and rare honour of delivering the Convocation Address of your University on the 12th August, 1967. I stated then the great part played by Bengal in the history of our country and I would like once again to reiterate my feelings in the matter.

It may be emphasised that Bengal has been the repository of culture and scholarship for centuries and it symbolises in a striking manner the synthesis of the old and the new galaxy of national leaders—Desabandhu C. R. Das, Surendranath Banerjee, Motilal Ghosh, Subhashchandra Bose, to name only a few—who have roused the Indian masses and kindled in them the ideas of liberty, equality and fraternity by their inspiring utterances and spirit of sacrifice. Their thoughts are an eloquent testimony to the prophetic adage 'What Bengal thinks today, India does tomorrow'.

The immortal and inspiring writings of Gurudev Tagore have spread the fragrance of Bengal to the far corners of India and to the remote regions of the world. While Sbantiniketan and the national anthem 'Jana Gana Mana' are legacies from Rabindranath Tagore, it was Bankimchandra Chatterjee who gifted the immortal song 'Bande Mataram' to the nation. Toru Dutt and Sarojini Naidu maintained these poetic traditions with their soul-stirring compositions and generated patriotic fervour. Who can forget another luminous star of India, Raja Ram Mohan Roy, the father of social reformation? As you all know he was greatly responsible for abolishing many of the social

evils and superstitions and special mention may be made of his endeavours to put an end to the pernicious practice of 'Satee'. No less significant in their depth and dimensions were the monumental endeavours of religious leaders like Chaitanya, Ramakrishna Paramahansa, Swami Vivekananda and Aurobindo Ghosh whose faith in the goodness of man, universal brotherhood and human services gave a fillip to the spiritual resurgence of India. The great scientists Jagadishchandra Bose and Prafullachandra Ray played a memorable role in laying firm foundations for the edifice of scientific research and advancement. Their admirable discoveries have become significant milestones in the annals of India's march towards technological progress. Bengal has been the cradle of intellectual giants, legal luminaries, outstanding nationalists and of scientists and scholars.

The epic of Bengal will be remembered by the future generations with gratitude for the efforts of eminent educationists who infused the spirit of nationalism and humanism in the minds of the youth of our country. Asutosh Mukherjee of revered memory will ever be remembered in the building up of this University by the ideals he had set up for maintaining the fullest autonomy without any interference either from Government or other outside agencies. I am indeed very happy to note that the successors have maintained the high traditions set up by them.

The solution of the many baffling problems of present-day India in different fields—a challenging task to be accomplished within the life-time of a generation—most obviously will make large demands on the youth who are the future leaders and statesmen to make necessary sacrifices in the coming years. They need, therefore, to have a clear focus of the goals and also to have a deeper understanding of the problems facing the country. Remember, without hard and sustained work, dedicated zeal and fervour, and above all, collective discipline and national character, the realisation of our goals will be neither smooth nor easy.

I feel happy to share some of my thoughts with you all. I very much value this prerogative as it gives me an opportunity of establishing a close communion and liaison with the members of the rising generation on whose shoulders falls the mantle of the future leadership of the nation.

It was my privilege that I had close association with the student world in my capacity as Chancellor of eighteen universities in India

during the last two and a half decades, which helped me in keeping my youthful spirit alive.

The crying need of the hour is to promote a cross-fertilisation of ideas between the younger and the older generations.

It is with this objective that I have tried to understand the youth's hopes, fears, trials, tribulations, struggles and aspirations, and above all, their psychology.

With ever-increasing activities in the country, the universities in general are called upon to widen their horizon as also to thrust themselves into new spheres of activities. The traditional role of the universities to serve scholarship and learning which have been the sole concerns of the academic institutions is now further strengthened by freshly added responsibilities of service. The universities in a democracy can no longer be content with the limited goal of scholarship. They have to devise new programmes and take into account the nation-wide needs and opportunities.

In this connection I may refer to the monumental report of the University Education Commission presided by no less a personage than Shri Radhakrishnan, an ex-President of India, which provided the guiding principles of shaping universities to our Free India. The report says :

Education has to provide leadership in politics and administration, the professions and commerce. It has to meet the increasing demands of each type of higher education, literary and scientific, technical and professional. It must enable the country to attain in as short a time as possible freedom from want, disease, and ignorance, by the application and development of scientific and technical knowledge.

As sanctuaries of the inner life of the nation, the universities today are called upon to make substantial contribution to the progress of knowledge on the one hand and the solution of practical problems on the other. It is today accepted that 'in times of turbulent change, the universities in a free society must press their scholarship into new fields of knowledge and fresh perspectives of policy if they are to enlarge the horizon of judgement and anticipate the needs of a changing world.' The primary aim of our educational institutions is to develop the character and integrity and to build up the personality of the students through proper discipline of body and mind. Here I would stress that all sections of the population, including the general public, should

take as much interest as possible in the proper management and functioning of our educational institutions. We should remember that the life and character of any nation depends on several factors—the temperament of the people, the systems of religion, of education, of law—all play their part. But the organisation which has the deepest and most abiding influence are the students, teachers, university authorities and, if I may say so, the parents themselves—all constitute partners in the progress and national regeneration. Universities have a crucial role to play in the life and welfare and strength of the nation. In inculcating the cardinal virtues which Guru Nanak preached—human tolerance, reason, depth of vision—and in making the students imbibe with the fervour of imagination, ideas and quest for truth, the university occupies a high place. The universities are the driving force behind the aspirations underlying human race attaining lofty objectives and if they fulfil the obligations to the student community in particular and the nation at large, then it will pave the way for translating into reality the goal of a democratic world order.

Let us remember and be loyal to the educational teachings of the three great sons of India—Rabindranath Tagore, Mahatma Gandhi and Pandit Jawaharlal Nehru—who have left a very valuable educational legacy for us and which alone can help us to create a national system of education. Rabindranath Tagore has emphasised many aspects of our culture and traditions which are educationally valuable. For instance he emphasised the role of nature in education and pointed out that the major objective should be to develop the emotions through an appreciation of all that is great and beautiful in nature, in life and in literature. I particularly invite your attention to the programme that he gave us to symbolise two significant aspects of education. The first is “Anthar Bharathi” which means the bringing of different parts of India together or national integration. It is based on the inculcation of patriotic feelings in the heart of every child by enabling him to discover the greatness of India for himself. It alone implies making him aware of that unity in diversity which the Indian culture essentially represents.

The other programme is “Viswabharati” or international understanding and collaboration wherein India should play a role worthy of ancient glory. According to Tagore, ‘Antharbharathi’ and ‘Viswabharati’ are not opposed to each other ; rather they are complementary movements which strengthen and support each other.

Mahatma Gandhi reiterated some of the things that Rabindranath Tagore emphasised. For instance, he stood for a strong patriotic feeling, rightly proud of our cultural heritage combined with the international life which is open to influence from every other culture in the world. He stated: "I do not want my house to be walled on all sides and my windows to be stuffed. I want the culture of all lands to be blown about my house as freely as possible. But I refuse to be blown off my feet by any. Mine is not the religion of the Prison House. It has room for the least of God's creations, but it is proof against insolent pride of race, religion or colour". He added three more important dimensions. The first was to provide a certain minimum education for every child to make him a responsible and useful citizen. Secondly, he emphasised the dignity of labour, the immense educational value of working with our own hands and the need to relate productivity with education. Thirdly, he emphasised secularism and understanding and respect for all religions which is the basis on which national integration can be achieved and sustained in a plural society like ours.

Pandit Jawaharlal Nehru shared the important educational ideas of both Tagore and Gandhiji. He felt enthused over Tagore's love and greatness. He was as sensitive to the welfare of the common man as Mahatmaji and solidly stood for his ideals of secularism and patriotism. But he added his own dimensions also. The first of these was his emphasis on higher education or the proper development of the universities. His famous words on the subject, said at a University Convocation years ago, have hardly an equal in the educational literature of the world. A University, Nehru said: "stands for humanism, tolerance and for the search of truth. It stands for the onward march of the human race towards even higher objectives. If the Universities discharge their duties adequately, then it is well with the nation and the people". The blending together of the educational thoughts of these three great men of India, in my opinion, is the essence of the Indian philosophy of education which we need for creating a national system of education suited to our needs and aspirations and capable of helping us to meet our challenges. It is this which I would like you to keep in mind when you are planning and implementing programmes. There can be no better source of inspiration and strength nor any surer goal of eventual success.

Our biggest problem, if not the problem, that the country faces today, to my mind, is unemployment and poverty. We must evolve a bold plan for full employment coupled with economic growth. What we

therefore need is an action-oriented programme with the main accent on fuller utilisation of our human resources. This vast employment potential can only be strengthened through an integrated programme of agro-industrial development.

The glaring disparity between the rich and the poor in town and country alike calls for immediate attention and intelligent action. Mobilisation of rural labour should go hand in hand with the providing of facilities to men with smaller means. It requires a vast net-work of genuine co-operatives which can be raised and run by thousands of dedicated workers devoting their attention and energies to the service of the people in every nook and corner in this country.

The social order cannot be built on the poverty of the millions, for misery breeds hate and hate leads to violence. We should never lose sight of our ultimate aim to have a society where people are happy, contented and willing to work for the orderly development of the social frame-work rather than a violent transformation of it.

I have often placed before the country my considered views as to how to tackle the problem of unemployment, under-employment, and poverty of our people so as to ensure social justice and avert social explosion. Steps must be taken to implement the directive of our Constitution that the citizens have the right to adequate means of livelihood.

The fundamental rights adumbrated in our Constitution, "the right to work and right to live and all other security measures from the womb to the grave" must be guaranteed to every citizen.

Twenty-eight years of independence could not tackle this problem and today it is a matter for the greatest regret that forty per cent of the people are living below the poverty line and we cannot congratulate ourselves that we have secured political swaraj unless we provide the people with the basic necessities of life.

Even when Gandhiji set the goal of political independence before us, he was fully aware and often stressed that political sovereignty was but the first step towards the final goal of economic swaraj for without it political freedom would have neither meaning nor substance.

Gandhiji's ideas of basic education were evolved after considerable thought and I believe they represented the quintessence of his wisdom. He stated in clear terms the principle of basic education applied to the whole life. It has been recognised by eminent educationists all over the

world that work-oriented education alone would improve the general discipline among the students and resolve the tangle of unemployment.

We have no time to waste in mere profession of ideals. What is wanted is the practical application. The establishment of a net-work of schools could alone be the basis of a purposeful educational programme.

My definite suggestion and advice to Governments is that boys and girls after they enter matric or have passed matriculation should be given a holiday for at least a year and compulsorily put on the land to undergo the fullest training in the art of cultivation, raising of vegetables and fruit, a knowledge of bee-keeping to produce large quantities of honey, knowledge of the intricacies in the raising of poultry, ambar charka spinning and taking part in such other small-scale and village industries. If this programme could be accomplished by Government and Universities, half the college-going population would settle themselves in rural areas along with their families and earn a decent standard of living.

Similarly the women-folk in hutments who are living below the poverty line, even middle-class families living in urban and rural areas can take up this work in their own homes, leaving the marketing of the goods produced to the Governmental authorities. The whole of these products will be available for internal consumption and much can be exported to other countries for the benefit of our foreign trade. The rush of population from the rural to the urban areas will lessen and rural parts will be developed with reasonable urban amenities. This is the only way to avoid frustration and disappointment to youth as well as to the common man.

At the very beginning of Planning in India, a net-work of 6500 Community Development Blocks has no doubt created much initial enthusiasm among the rural people and helped in absorption of rural manpower in developmental activities. But today these projects are merely retained as skeletons. We should have intensified the process of integrated economic development and not slackened our efforts. These Development Blocks should have been colonised by the people mentioned above and they should have been the training ground for people who would like to take one or many of these cottage industries. That is why my slogan has been for many years : every house a cottage industry and every acre of land a new pasture. These 6500 Blocks must be multi-purpose establishments and they should be treated as Co-operative Farms with provision for reclamation, tractorisation, irrigation and improved methods of cultivation. The ultimate aim is to cover the entire country

with these ideas. It should be a condition precedent that the ownership rights are not conferred on the colonists. The ownership of the land should vest in the State and the grant of the land should be treated as a means of livelihood and not transferable to anyone. The fact is, as has now been, to distribute the lands to the poorer sections of the people and the grant of pattas to them. These poor people cannot invest money themselves for improvements and ultimately the lands will go back to the money-lenders for exploitation. The effect of giving pattas is against the very socialistic pattern of society that we want to establish. This has to be remembered and this position should be examined by Government.

In the days of our struggle for freedom, Gandhiji gave us this direction. "I shall work for India in which the poorest shall feel that it is their country in whose making they have an effective voice ; an India in which there shall be no high class and low class of people ; an India in which all communities shall live in perfect harmony".

Gandhiji's life and work have great relevance to the problems we are facing today. Let us remember Bapu's clarion call for ridding our society of the many sins that prevailed. As early as 1921 he warned the nation against the dangers of :

1. Politics without principles ;
2. Wealth without work ;
3. Pleasure without conscience ;
4. Knowledge without character ;
5. Commerce without morality ;
6. Science without humanity ;
7. Worship without sacrifice.

With our vast coast-line extending over 3,000 miles, we have got immense possibilities of developing fisheries and this will greatly help in relieving under-employment and unemployment among the people in the coastal areas. Apart from providing employment opportunities, this will also augment our food production and simultaneously we can engage ourselves in exploring the export market, for many of our sea foods are considered to be delicacies abroad. There is great scope for further expansion of minor irrigation facilities including large expansion of tube wells, cultivation of high yielding varieties of foodgrains, multiple cropping in irrigated areas, increased use of fertilisers and improved seeds, soil conservation including terracing and contour-marking in hill areas. In the field of agriculture alone the programme will absorb a large number of surplus manpower.

We are trying to make India self-sufficient in its needs regarding heavy, key and large industries which is indeed a 'must'. However, it should be clearly understood by economists and planners that the so-called monuments of development such as gigantic steel plants, machinery works, big dams, power stations, will not mean much, if everyone in the country does not have enough food to eat, safe water to drink, minimum amount of clothing, adequate shelter and opportunities to enrich one's outlook to enable him to realise his best to society. This is the path shown by Bapu, the 'Father of the Nation'. Unless planning begins from the grass-roots we will not be able to guarantee the minimum comforts to the masses. It is true that without growth by itself no problem can be solved for any length of time. At the same time, growth itself has to be generated in a manner which meets the requirements of social justice.

A progressive agriculture and prosperous industry requires a suitable political, social and cultural climate. If we allow the energies of the nation frittered away by futile conflicts the prospects will be very bleak. Without a spirit of tolerance and amity and mutual trust, our democracy will remain formal without any content. Leaders in the country belonging to the right, left and centre, are groping in the dark and they are engaged in unnecessary feuds emphasising differences leading us nowhere. If only all parties without distinction take up this problem which is more vital and solve the same in the course of a decade, all other issues—major and minor—will be automatically solved.

The time has now arrived when all of us should actively rise against the forces of parochialism, factionalism, racialism and consider them as enemy number one which tend to sap the health of our democratic order. Let everyone of us with a spirit of introspection and retrospection ponder over calmly as to what we have done for our country and where we are going.

Advising political and social workers Mahatma Gandhi said that the cry of the poor should not remain unheeded. Whenever you are in doubt or where your self becomes too much for you, Bapu asked them to apply the following test: "Recall the face of the poorest and the weakest man whom you have seen and ask yourself if the step you contemplate is going to be of any use to him, will he gain anything by it; will it restore his control over his own life and destiny. In other words, will it lead to *swaraj* for the hungry and starved millions?"

JAI HIND.

CONVOCATION ADDRESS

By

SATYENDRANATH SEN, M.A., PH.D. (LOND.)

Vice-Chancellor, Calcutta University

Delivered on Saturday, the 13th March, 1976, in the University of Calcutta.

Mr. Chancellor, Mr. Chakravartti, Sri. Sumitra Nandan Panth, Dr. Sethna, Members of the Senate, Graduates, our Guests, Ladies and Gentlemen.

We are extremely fortunate in having Mr. Justice P. B. Chakravartti as our Chief Guest to-day. He was for some time our Chancellor. Well-known for his knowledge of law and for his work as the first Chief Justice of the High Court of Calcutta after Independence, we know him intimately as he had formed a One-man Committee to draw up a Charter of rights, privileges and duties of the teachers of this University. His recommendations were later included in the Statutes. The teachers of this University and its affiliated colleges remember him gratefully for his broad sympathy, clear understanding and persuasive arguments. We all pray that God would grant him a long life so that the young men and women of to-day would see in him one of the best illustrations of the nineteenth century Indian.

We are also very grateful to Sri Sumitranandan Panthji for agreeing to receive the Degree of D. Litt. (Honoris Causa) from our University. It is, I think, for the first time that this University is honouring one of the best writers in Hindi, thus emphasizing the multilingual character of this University where Sir Asutosh opened the Department of Modern Indian Languages and Literatures. We would like also to mention the fact that in November last year, we held a Special Convocation for awarding the D.Sc. (Honoris Causa) on Professor J. N. Mukherji at his residence. This is the second occasion when the Senate held a special convocation at the residence of the awardee. We are grateful to our Chancellor for coming, in spite of his busy schedule, to the residence of Professor J. N. Mukherji and award the Honorary Degree on him. Prof. Mukherji's short speech on that occasion was very much appreciated by all those who were present.

The first task for the Vice-Chancellor is to present a brief review of the activities of the University and to mention the chief events which

took place since the last Convocation. During the year under review we can say with some pride that this University has been able to achieve a good deal of progress in different spheres. The scars left by the events of the so-called *Naxal* period in the history of this University are being healed. We are trying slowly and steadily to bring the examinations back to their usual times: the long period between the holding of examinations and the publication of results is steadily being shortened. Large-scale copying in examination halls is being effectively checked, thanks to the courage shown by many of our teachers and the co-operation that we have received from the District administration and the Police. We hope to be able to eliminate to a large extent the spirit of indiscipline in examination halls which is unfortunately the relic of the political situation of the last few years. Our methods may appear to be less effective in the immediate context. But our motto is to hasten slowly and to induce the young people to do what we think they should do by persuasion and consent. That is the academic way—by argument and reasoning—and we are convinced that we shall be able to bring normalcy in our activities through this method in a year or two. Already student-demonstrations have become less frequent, less violent and less time-wasting. Just as things did not become worse in one year, they cannot also become good within a short period. The upward journey usually takes a longer time than the downward one. Strong hands have to be combined with patience and forbearance. As I have always been pointing out, examination delays, indiscipline, mistake or non-available marksheets are no doubt things to be deplored and to be set right as quickly as possible, but these form a comparatively small part of the activities of a teaching-cum-affiliating university. One should not also forget two facts in this connection. Charges of under-marking of scripts and of mistakes in marksheets are not new things in this or any university in old days and the only additional thing that is happening is that their number has increased several times. But then the number of students and examinations have also increased many times. Not a day passes in the year when some examination of Calcutta University is not being held. We are now holding 318 examinations in a year of more than three lakh candidates. One should keep in mind the stupendous nature of the task.

If one looks a little deeply into the working of this university, one would find many evidences of increasing research activities on the part of its teachers and Research Fellows. As I have been telling constantly, we have not been able to give any grants, to say nothing of adequate grants, to our teachers to enable them to carry on research, though that is an

important part of their activities and one of our basic objectives. This year, thanks to a small grant received from the State Government, we have been able to give nominal grants to our teachers. These are absolutely inadequate and we hope that in spite of stringency, the State Government and the U. G. C. will give us special grants so that we can, in addition, provide adequate research grants to the teachers and research staff. In spite of this handicap, teachers from almost all departments of Science, Technology, Agriculture, departments of Political Science, Commerce, Economics, Modern Indian Languages and others have been busy on a large number of research projects which they obtained from various sources, such as the U.G.C., C.S.I.R., I.C.A.R., I.C.M.R., State Government and other institutions. The total number of such projects exceeds 65, and the aggregate amount involved is roughly Rs. 75 to Rs. 80 lakhs. The majority of these research projects are related to an analysis of the nature and solution of actual problems facing the country and these are likely to throw new lights on many of them and to be both agriculturally and industrially significant.

In addition to these research projects, the different departments have conducted a large number of seminars, symposia and workshops. This University has been the host to two International Seminars, one on "Relativity and Unified Field Theory" organised by the S.N. Bose Institute of Physical Sciences, and the other on "Regions of non-literate people", organised by the Department of Anthropology in co-operation with other institutions and associations, national and international. Other seminars and symposia at the All-India level or for all universities and institutions of the Eastern Region were held under the auspices of the Departments of Chemistry, Geography, Botany, Computer Centre, Bio-Chemistry and Bio-physics. The Guha Institute of Bio-chemistry and the Department of Bio-Chemistry also hosted the 44th Annual Convention of Bio-Chemists at the All-India level. The Department of Museology and the Asutosh Museum also organised seminars—one on Museum and Cultural and Scientific Exchanges—South and South-East Asia, and the other on the "18th Century India", which was inaugurated by Professor Satish Chandra, Chairman, University Grants Commission.

The University also sponsored two important proposals for the establishment of multidisciplinary research and teaching units. The first such unit is the "Centre for Neuroscience" which was inaugurated by Prof. R. W. Doty, President of the Society of Neuroscience. The first of its kind in India, this centre hopes to provide advanced graduate

training and to promote fundamental research in the wide areas of neurosciences. Secondly, proposals are already in an advanced stage with regard to the establishment of a unit for the study of Sports Medicine and Science, with the co-operation of the Departments of Physiology, Applied Psychology, College of Medicine and others. We hope that the U.G.C. and the State Government will come forward and help us with funds adequate for the working on these important fields of study. Another important event has been the opening of the M.Sc. course in Home Science at the V. L. Mitra College of Home and Social Sciences, and we are grateful to the State Government for its generous grant to run this course of study. This College has also been selected as the Eastern Regional Centre for Nutrition and Health Education,—a scheme sponsored and financed by the NCERT in collaboration with the UNICEF. Speaking of recognition of the work of our departments, we are glad to note that the Department of Chemistry has been selected for UNESCO assistance to strengthen its teaching and research activities still further. The Department of Radio-Physics, adjudged to be one of the "Excellent Centres" of Advanced Study by the U.G.C., has also been nominated as one of the Centres for research and training in Radar and Communication by the Ministry of Defence, Government of India. The Department of Commerce has been recommended by the U.G.C. to undertake University Leadership Project on a continuing basis for the next three years. The Department of Applied Psychology has set up a Service Programme Unit to provide management consultancy, management training and personal selection to industrial concerns.

Our teachers are also receiving more and more recognition for their outstanding work. Professor B. R. Nag has been awarded the Jawaharlal Nehru Fellowship, the second Fellow from this University. Professor S.K. Mukherji, Khaira Professor of Agriculture, has been the recipient of the Rafi Ahmad Kidwai Memorial Prize by the I.C.A.R. for his contributions in the field of Horticulture. Professor A.K. Sharma has been awarded the Silver Jubille Memorial Medal by the INSA, and he and his wife, Dr. Archana Sharma have also been jointly awarded the first J. C. Bose Memorial Award in Life Sciences by the U. G. C. Professor Sharma has also been elected Chairman of the National Committee of the International Union of Biological Sciences for the next three years. Prof. D. N. Ganguli has been awarded the Sir Dorabji Tata Memorial Gold Medal for 1972-73. Dr. D. N. Nandi of the University College of Medicine has received the Marfatia Award for the best scientific paper presented at the Indian Psychiatric Conference. Dr. Subir Chatterji

also received the "Hari Om Award" by the Association of Surgeons in India for his outstanding research on Surgery. In addition, two of our teachers, Dr. A.K. Chandra and Avijit Banerjee were selected as National Associates by the U.G.C.

A large number of research students have been admitted to Doctorial Degrees during the year. Their total number is 375, distributed as follows :—D.Sc. and D. Litt. (19), Ph. D. in Science (140), Engineering (2), Agriculture (5), in Arts (80), Medicine (6), M.D., M.S., and M.O. (3), M. Arch. (1). As before, quite a number of such theses have earned high praise from their foreign and Indian examiners. There is no doubt that we have been able to maintain comparatively high standards in our research. As is well-known, this University has been the fortunate recipient of a number of endowments to provide for the delivery of lectures on different subjects by distinguished scholars, Indian and foreign. One such prestigious endowment is the Tagore Law Professorship Lectures, and a large number of internationally known scholars have responded to our invitation to deliver these lectures. This year we have been fortunate in having Sir Zelman Cowen, Vice-Chancellor of the University of Queensland, Australia, to deliver lectures on "Right to swing my Arms". These were highly appreciated and maintained the traditions of the Tagore Law Lectures. A second prestigious lectureship is the Kamala Lectures, and the Senate offered this to Srimati Bandaranāyake, Prime Minister of Sri Lanka, our neighbour, to deliver a course of lectures on "Cultural Relations between India and Sri Lanka". Unfortunately the Prime Minister of Sri Lanka has not been able to accept the offer on account of the pressure of her work. Another interesting endowment was the institution of "Biplabi Surjya Sen Memorial Lectures" in this University, the first of its kind in memory of one of the brilliant leaders of the Freedom Movement in India. The first lectures were delivered by Sri Ganesh Ghosh, a close associate of Sri Surjya Sen.

Apart from teaching and research, the activities of this University have also been notable in Sports and National Social Service (NSS). Teams from this University participated in about 15 Inter-University Tournaments and championships and won for the first time "Replica Trophy" of the Inter-University Swimming and Waterpolo Championship for three years in succession. The University has also won the All-India Inter-University Boxing Championship and the All-India title in Inter-University Kabaddi Tournament (Men). The NSS Section has also been doing good work and has involved a large number of students, boys and girls, in such type of activities as medico-social work, construction of

roads, buildings, small irrigation canals, illiteracy campaign etc. Our only grievance is that we not getting adequate financial aid consistent with the number of students for whom we have to cater.

The present academic year has been characterised by two important events. One is the Chancellor's meeting with the Vice-Chancellors of all State Universities held in the last week of August, where the Chancellor, the Chief Minister, and the Education Minister discussed a number of matters relating to the working of the universities with the Vice-Chancellors. The ensuing discussion was useful and a consensus was reached with regard to a number of measures. Such a meeting should be held at least once during every year, and there should be a free and frank discussion of the problems of the universities and of the views of the State Government vis-a-vis the universities. Unfortunately there exists a certain amount of communication-gap between the State Government and the universities, and we have a feeling that the State Government has not always attempted to understand the difficulties which we in the universities have to face in handling both our students and employees. The more we discuss our mutual problems and difficulties, the better will be the relationship between us and the State Government. The relationship between the State Government and the University is not one of master and servant, even though the former provides a large part, and in the case of some universities, almost the whole, of the revenues of the university. The relationship is, and should be, one of partnership of special type. The more we come to know of each other's problems, the better for both these institutions, and the easier it will be to find suitable and agreed solutions for all differences between us. While discussing our mutual problems, I would like to point out the fact that such discussions should not imply that the same solution has to be prescribed for all universities, irrespective of their needs, problems and views. When, for example, we make some reservation on behalf of our university to some prescribed solution, our views should be specially heard and given due weight, and a proposal, though acceptable to others, should not be imposed on us ignoring our serious opposition. The problems of a large affiliating-cum-teaching and ancient university are different in many respects from those of a small unitary university or of new and comparatively small-sized affiliating-cum-teaching universities and the same prescription may not, and often will not, cure the maladies of all types of universities. Attempts should also be made to base all decisions of such meetings on consensus.

The second noteworthy event is the promulgation of the West Bengal Universities (Control of Expenditure) Ordinance on 30th January of this year. This legislation laid down two serious restrictions on the powers and working of the universities. First, Section 3 took away from the universities all authority (a) to create new posts, teaching and non-teaching, (b) to fix the salary-scales and allowances and remuneration of any kind for all teachers and general employees of the university and (c) to implement any development project anywhere in the university. These can only be done with the previous consent of the State Government. While this Section permits the university to fill up all existing posts which are vacant, it has prohibited the filling up of all approved posts in affiliated colleges. Another Section of the Ordinance (Sec. 6) requires the university to send its budget estimates two months in advance of the beginning of the new financial year to the State Government for its approval, and the university cannot incur any expenditure on any item not approved by the State Government. It should be noted that while matters included in Section 3 (1) [thus excluding Section 3 (2) relating to affiliated colleges] were discussed at the meeting of the Vice-Chancellors with the Chancellor, and certain conclusions were reached, the requirements with regard to budget estimates were not raised at the meeting at any stage. Legally, the State Government has of course every right to impose any restrictions on the universities. But legal rights have never been the end of such matters and good conventions have on many occasions modified legal rights. In the matter of universities one must pay serious attention to academic considerations, and follow the wise advice of Jesus that we should render unto academicians what belonged to academicians. Opinions may differ as to what belongs to Cæsars or to academicians in a particular context. But broad trends and limitations should be recognised in the interest of promotion of a healthy relationship between the State Government and the University, which, as I have stated previously, should be one of partnership, rather than one of master and servants. We approached the Chancellor and the Chief Minister pointing attention to the very drastic nature of the Ordinance. It took away all our powers to appoint a single employee and to spend a single rupee, even out of our endowment income, without the previous permission of the State Government. This Ordinance has at one stroke reduced us to the status of a British Indian Province in the late nineteenth century when the Provincial Government had no authority to appoint even a single peon and spend a single rupee without the consent of the Central Government. No one has claimed that the

Provinces in those days enjoyed any autonomy, to say nothing of Provincial autonomy. As it happened the other day at the meeting of the Academic Council, a motion for revising the syllabi of the Master's Degree course in Philosophy came up before the Council and it was pointed out that the changed syllabi could not be implemented by the Department without the appointment of more teachers. Since the creation of new posts was to be decided by the State Government, the University has under the Ordinance lost its authority to change and modernise syllabi and courses of study and could not fix any date for their implementation. It would all depend on the views of the officials of the State Government. Universities will thus be prevented from implementing their decision to change syllabi without the previous consent of the State Government if the change involves the creation of one or two posts. We must not forget the long-drawn out controversy lasting over 3 or 4 years between the State Government and this University over the question of appointment of 4 teachers for teaching Honours Courses. It is of course true that the State Government ultimately accepted our academic point of view. But in the meantime students of Honours Courses had to suffer.

Fortunately the Chief Minister, the Education Minister and the Finance Minister took a sympathetic view of the points raised at our meeting and we have been assured that necessary amendments would be made in the provisions of the Ordinance. In fact, as we have argued in the memorandum submitted by the members of the Syndicate to the Chancellor, there is absolutely no necessity for the promulgation of this Ordinance. The financial curbs which the State Government proposes to impose on the expenditure of this University can easily be secured by means of understandings reached with us after the Government fixes common salary-scales and allowances for the general employees of all State Universities. In the last few years teaching posts have been created with the approval of the U.G.C. and the State Government and we propose to adhere to the same practice. Calcutta University is the senior-most University in this country and it can be compared with many of the best universities of the world. There is really no reason for the promulgation of such an Ordinance for this University, which is proud of the freedom from control that it had enjoyed even during the hardest days of British rule. We do not feel that we have committed any serious financial indiscipline as to deserve such a severe restriction of our autonomy. The total number of general employees is at present about 2300. We are now conducting the

examination of roughly three hundred thousand examinees during a year. We have to correspond and otherwise keep in touch with more than 22,000 examiners. We have 16 Faculties, 6 University Colleges with 62 Post-Graduate Departments with more than 13,000 students on their rolls. Considering the huge burden that we have to carry, we have a comparatively small non-teaching staff. The total teaching staff of this University is also small in number compared to many other universities, when regard is paid to the number of Departments, subjects and students that we have in our University. Moreover, as I have pointed out in my booklet—"The Largest and the Poorest University"—the number of Readers and Professors of this University is proportionately much less than that of other Indian universities. Though our work-load has increased very much during the last decade, we have not, because of the paucity of resources, been able to appoint adequate numbers of teaching and general staff to the desired extent. Any one who looks to our size, our work-load and our finances will be astonished at the moderation with which this University is trying desperately to manage its affairs. We are sure that an unbiased examination of all facts relating to our University will convince every body that we are actually underspending on staff, both teaching and non-teaching, relative to our needs. Yet we have been accused of "financial indiscipline".

The last year witnessed a spate of legislations for this and other universities. The State Government has promulgated a number of Ordinances and the State Legislature has approved of a Bill amending the Calcutta University Act of 1966, in particular respects. All of us have welcomed the representation of students in the Senate and would be glad to see representatives of our general employees also, in the Senate. But none of us imagined that the occasion would be taken advantage of to change the basic structure of the Senate and to reduce the representation of university teachers. The Academic Council which met shortly after the news about the Bill was published in the newspapers reacted strongly by opposing the Bill, and we made representations to the State Government which we hope would change the provisions of the Bill suitably. Another Act and an Ordinance have held out the threat of imposing on the University the so-called University Services Commission. We have opposed this proposal at our meeting with the Chancellor, and the arguments that we have heard both from the Ministers and other Vice-Chancellors have not convinced us of the necessity or justification for the proposal. The method of recruitment of the teaching staff in this University is one

of the best to be found in any university in the world. Three experts sit with us on all Selection Committees, one nominated by the Chancellor independently of the University, one nominated by the Post-Graduate Council of Studies and the last by the Syndicate. During the years of my Vice-Chancellorship there has not been a single occasion when a selection was made without the full approval of the experts, and have never tried to impose any candidate on the experts including the expert nominated by the Chancellor. We should like to have sufficient evidence to prove that this University's selections have not been proper and that any other system of recruitment would be better than that prevailing not only in our University but in the vast majority of universities in this country. The method of selection by a so-called University Services Commission, however composed, will never prove superior to the system prevalent in this University. As we have stated previously, Calcutta University is more than a century old, and has built up well-known traditions and conventions. Its position as the mother university of this country should be respected. Nothing has happened to equate this university with our daughters in the State. If the Vice-Chancellors of these young universities want such a Commission because of their experience, let them have it. But when Calcutta University with its age-old traditions and experience does not want the imposition of such a Commission, we hope that the State Government would respect our experience. Unfortunately in this matter, the experience of our junior colleagues and our own experience differ in fundamental respects. As we do not like to impose our experience on our daughters, so we do not want that we would be required to follow their experience in preference to ours. Let each generation have its idols and enjoy its own sense of autonomy.

In spite of this spate of legislation affecting this University, nothing has been done as yet with respect to the most serious problems facing Calcutta University, its abnormally large size and its acute poverty. The Syndicate has forwarded its views on the majority of the recommendations of the U.G.C. Committee on Calcutta University (popularly known as the Ghani Committee) to the State Government, and we hope that the latter would soon meet us at a conference to have a full discussion of the proposals of the Committee and of the Syndicate. Matters have been allowed to drift for too long and the views of the U.G.C. Committee which had been set up by the Chief Minister himself when he was the Union Education Minister, and which consisted of the nominees of the Union Minister for Education, the U.G.C., the

State Government and Calcutta University should be given due weight by all of us. We would again like to mention the fact that this Committee has recommended, after mature deliberation, that, apart from reduction in size, this University should be recognised as an Institution of National Importance both by the State Government and the Union Government and the latter should bear the major burden of financing this University. We hope that during the present year the recommendations of this Committee will be fully implemented, and this University will be able to renew its onward march with a reduced burden and large finances. As I sincerely believe that this University, yours and mine, will soon rise to great heights of achievement, thanks to the efforts made by our teachers, students and employees in spite of many handicaps. I would like to bid goodbye to our graduates and other students on this note of optimism.

CONVOCATION ADDRESS

BY

DR. S. N. SEN

Vice-Chancellor, University of Calcutta.

Delivered on the Occasion of the Sixty-Third Convocation of the Nagpur University, on the 15th May, 1976.

*Mr. Vice-Chancellor, Members of the Senate,
Distinguished Guests, Students. Ladies and Gentlemen;*

I consider it a great privilege to be invited to this Convocation of your University as the Chief Guest. I belong to the seniormost university of this country, a university whose jurisdiction has continuously shrunk over the last 100 years and yet whose student strength has continuously increased. To-day we claim to be the largest university in this country, if not in the world, and I bring to you greetings of the oldest and the stoutest sister of yours on this happy occasion. Your University has the tradition of a steady pursuit of the main objective of the university system—advancement of learning. We all feel glad when we meet one another as a hemp-addict does when he finds another fellow traveller. We are all members of the same community, and though we do not often agree on most points in the true academic tradition, our pleasure is nonetheless genuine when we happen to meet one another.

The University system of our country is to-day grappling with a large number of questions relating to the problems connected with the nature and quality of higher education. This does not connote that all or many things are wrong with the system. It only proves that our universities are not complacent, but are constantly trying to find out how they can prove to be more useful to the community which they are creating and helping to grow. All things move and change—that is the meaning of the word 'Jagat' or the world, and every organisation has to adjust itself continuously to its changing environment. Our university system is now also busy taking stock of the situation and is trying to find out what changes in its structure and working are necessary to make it a better instrument for the development of the people and the country. This is a sign of vitality and those critics who think that the University system has declined sadly because it is facing so many criticisms are harbouring incorrect ideas. The first step in the process of learning is to

ask questions, to analyse ideas and to criticise their validity or suitability. In the academic world, criticisms and fault-finding are the very breath of life. They signify not decay or decadence but growth and progress. Those who impartially compare the university system around the year 1951 with that of to-day—after a quarter of a century—will have to admit that in spite of the fact that academicians are often very conservative people, a large number of changes, good or bad, have been introduced among the universities. Some of these changes—like the indiscriminate expansion of the sixties for example—no doubt yield many minus points. There are, however, others like the increasing emphasis on science and technology—research and development etc. which have raised the quality of the system. The indiscriminate expansion of the sixties may also be justified to some extent as a historical necessity and has served in a way to make higher education less elitist in nature. For example, in my own State, West Bengal, the establishment of a number of new universities has served to make higher education available to a much larger number of regions and their people than would have been possible with only one or two universities in the State. One must not forget the fact that in this country—and probably in many others—higher education is a status symbol and also provides a key to many jobs, irrespective of the quality of that education.

In any case most of you must be hearing and probably making a lot of criticisms about the working of our university system. I do not propose to deal with all or most of them. I would, however, like to take up for discussion to-day just one or two points connected with some recent trends in a number of our universities. Under the Indian Constitution, universities are under the State Government, and except a number of central universities (about six or seven in number at present), all the other 74 or 75 traditional universities are operating under the State Governments. On the other hand, the task of coordinating and maintaining standards in higher education has been entrusted to the Central Government which has set up the University Grants Commission for that purpose. Though the question has not come up in importance as yet, the relationship between the State Governments and the U. G. C. is one of the untrodden areas in the realm of higher education in this country. The problem would not have been important if the U.G.C. had remained as only a grant-giving body, channeling central funds to the State universities to enable them to develop in certain ways desired by the U. G. C. But the Indian U. G. C. is not only a fund-distributing agency, but is an institution of the Central Government for the

maintenance and improvement of standards in higher education. It has, therefore, a positive role in higher education, and is and should be very much interested in the constitution and working of the universities. The undefined and sometimes unsatisfactory nature of the relationship between the State Governments and the U. G. C. will be evident from one fact. The State Governments are free to set up any number of universities within their jurisdiction, and the years since 1960 have witnessed a very large expansion in the number of universities. It is not known whether any State Government had consulted the U. G. C. before setting up a new university. The consultation should have been not only as to whether there was a good case for the new university, but also as to the nature and composition of that university. That the Central Government felt some doubts over this expansion in the number of universities is evident from the provisions of the new U. G. C. Act under which it was laid down that if a State Government established a new university without the consent of the U. G. C., the latter need not grant any funds to that university. This is the first step in codifying the relationship between the U. G. C. and the State Government. The efficacy of this instrument in preventing the unplanned growth of universities is yet to be seen. If a State Government insists on the establishment of a new university in spite of the adverse views of the U. G. C., the latter may ultimately have to yield and provide grants to the unwanted new baby. One may cite another instance in which the efforts made by the U. G. C. to improve the constitution and working of universities proved to be ineffective due to the indifference of the State Governments. In the sixties the U. G. C. published a Model University Bill for the guidance of the State Governments. In the seventies another such attempt was made and a committee headed by Dr. Gajendragadkar and consisting of distinguished academicians sat for many months and produced a report on the composition and working of universities. That report is a valuable document. But very few State Governments have paid full attention to the recommendations of this committee when establishing new universities or reorganising the old ones.

If everybody insists solely on his legal rights without regard to the consequences of such action, as Shylock did in demanding his pound of flesh, it will not only be extremely difficult to work democracy, it will not provide any satisfactory system of Government. Democracy is, of course, based on laws. But it is also equally, if not more, dependent on conventions than any other form of Government. Just as the States have the right to set up any number and type of universities and to

influence their working in any way they like, the U. G. C. has also the legal right to maintain and improve standards in the universities. If the rights of the States over their universities are to be safeguarded and at the same time those of the U. G. C. which are also perfectly valid are to be given their due importance, this can be done in two ways. First, the subject universities, is to be transferred from the State list to the concurrent list by suitably amending the Constitution. This proposal is not a new one and has been made from time to time over the last two decades. As recently as April, 1976, it has been advocated by the present President of the Indian National Congress and by the Convention of Academicians on Development, Education, Democracy and Social Change. There are many points both in favour and against this proposal, and these will probably be debated throughout the country. Any proposal coming from so many distinguished persons must command our respectful attention. When a subject is included in the concurrent list, both the Central Government and the State Governments can pass laws relating to that subject—in this case, the universities—the Central laws prevailing over the State laws. In what way or ways will this measure help in the task of maintaining and improving standards in the working of universities? The Central Government may, for example, pass legislation providing a broad framework of the composition of universities, say, on the model enunciated in the Report of the Gajendragadkar Committee, and may require all State Governments to set up universities based broadly on that model while permitting some variations in details to suit local conditions. In this way the efforts made by the U. G. C. to maintain some norms in the constitution and working of universities will not go to waste as is happening at the present moment. Secondly, the extremely defective and hesitant manner in which the question of introducing the new salary scales for teachers in universities and colleges is being handled could have been avoided had the subject universities been included in the concurrent list. The basic objective behind the proposals for the new scales is forward-looking,—to attract the best students to the teaching profession by placing the Class I Teachers on the same footing as the Class I Officers so as to enable the best students to make a free choice regarding their career, and not an unfairly loaded choice, as has been the practice so far. The future of higher education depends basically on the availability of the best teachers in the universities and colleges. If at present the quality of many teachers in such institutions is taken to be rather low that provides all the more reason for raising salary scales to such levels as will serve to attract the

best talents to teaching. If the present standard among the teachers is found to be unsatisfactory, we must go behind this fact and try to find out the reasons for such a serious situation. When this is done, it will be found that one of the principal factors responsible for such a state of affairs is the payment of comparatively low salaries to teachers as against those who went in for a career in administration, banks, insurance companies and similar organisations. We must redraw our list of priorities. Another factor which will hamper the achievement of the main objectives behind this proposal is the differing conditions attached to the introduction of the new salary scales by different State Governments. Let us be clear about one thing. If we do not believe in the objectives of this proposal, let us say that in plain words and refuse to accept the scheme. But one should not, while accepting the proposal, attach such conditions as would be bound to harm its main objective. As a teacher for more than three decades and as an educational administrator for more than 8 years, I feel that the proposal is being handled in such a manner as to defeat its basic objective. If the Central Government feels that it is helpless in the matter as the subject, universities, falls in the state list, let us remove this defect and arm the centre with enough authority to maintain and improve standards in higher education. Whatever may be one's opinion regarding the importance of education in general, higher education in general, higher education with its increasing emphasis on research and development is too important a subject for the future of this country to be left entirely to the states, whose governments are inevitably subjected to a lot of local pressures. In fact, higher education has more claim, from all points of view, to be placed on the concurrent list than, say, trade unions.

There is another matter in which there is not only a great scope but a serious need for harmonising the main objective of the U. G. C.,—coordination and maintenance of standards in universities—with the autonomy of the State Governments. In the seventies, a number of State Governments have promulgated ordinances or passed quick legislations for suspending the administration of universities. If a State Government has reason to feel dissatisfied with the working of any university or of a number of universities, it has every right to take drastic steps for the removal of these defects. Nobody, including those in charge of university administrations, will deny that while universities must have autonomy in working they must at the same time accept their accountability to the society. There should be some authority to take remedial measures when a university is not discharging its functions

properly, and that authority under the present constitution is naturally the State Government. But one must at the same time recognise that the State Governments should in their turn be accountable not only to the State Legislature, but also to the society. So before taking any drastic action against an erring university the State Government should be doubly sure—not only sure that the occasion and the step are fully justified but also sure that its actions have the seal of approval of another independent organisation specially on the subject of universities, i. e. the U. G. C. In other words, the State Governments should be required to consult the U. G. C. before taking any action in relation to any university or before passing any legislation on university or before passing any legislation on universities in the State. After all, the U. G. C. has not only the statutory duty of looking after the coordination and maintenance of standards in all universities in the country, but it is also fully conversant with the working of these institutions on an All-India basis. The State Governments may not always be fully informed about university matters in all parts of India. They are also subject to local pressures, right or wrong, from which the U. G. C. is free. From all these considerations it is absolutely desirable to ensure that while the State Governments should be free to take any action they consider necessary, in relation to a university or universities, they should at the same time be placed under an obligation to consult the U. G. C. before they decide on the final step. After all, the health of the university system is too important to be left in emergencies to the treatment of only one physician. One should make it obligatory for the physician to consult the expert on the subject.

While these subjects may not raise much controversy from the academic standpoint, one must at the same time recognise the obvious fact that there will be grave political opposition to the inclusion of universities in the Concurrent List. If, because of such opposition, this particular recommendation of the Convention of Academicians cannot be implemented, the need for forging a balance between the functions of the U. G. C. as the authority to maintain and improve university standards and the power of the State Government to legislate with respect to universities has to be satisfied through the evolution of suitable conventions. No democratic government is run on the basis of a very strict interpretation of the Constitution and the laws. A successful democratic government is more a matter of good conventions than purely of laws. If the State Governments agree to accept the dominant role and expertise of the U. G. C. in the matter of Universities

and to adopt a number of conventions under which they would consult the U. G. C. before taking any action in relation to the State universities, a way would be open for the satisfactory achievement of the main objective of the U. G. C., which, I think, should also be the objective of all State Governments. Even if it is accepted that in the matter of higher education the States should continue to be the legislative authority, one must also recognise that the country has come to have great confidence in the knowledge and impartiality of the U. G. C.; and as higher education can never be less than of All-India concern, the State Governments have everything to gain if they agree to the convention that they should consult and abide by the advice of the U. G. C. in matters concerning universities.

These are matters of All-India concern and should be debated by academicians and all others interested in the future of education in our country. I would moreover like to speak a few words to the students of this University. I offer my sincere congratulations to those students who have been successful and will receive their degrees, medals and prizes. I recall our old days when I was a student like you. In the thirties of this century, we also faced unemployment even after a successful academic career just as some or many of you would probably have to do to-day. From my own experience and from what I have seen from the examples of a large number of my students I would request you not to get disheartened or disillusioned. I believe that in spite of all criticisms and all charges of corruption, our country has made notable advances in many directions and it is now much better equipped to deal with the problems of unemployment than it was in 1951. We have succeeded in building up a good infra-structure for development take-off and all that is now needed is some re-orientation towards job-creation in our planning efforts. What is, moreover, important is the emphasis on the thing called self-employment. Instead of waiting for comparatively soft white collar jobs the young men and women should go ahead and try to create jobs for themselves and for others. We do not subscribe to the thesis that aversion to ordinary manual labour that exists to-day has been due to the defective educational system of our country. In fact, this social trait would be found to have existed long before the present educational system came into existence. On the other hand this educational system by bringing children from all communities and social groups together is actually working against this peculiar social psychology. This feeling that manual work or particular types of manual jobs is too low for the so-called *Bhadraloks* does no doubt exist

to-day in our society. But under the impact of the educational system and the the pressure of economic and political events this phenomenon is steadily declining and will further decline in the future. We are sure that our young students are now anxious to accept and perform any job, manual or otherwise, without feeling ashamed. Our teachers are trying to tell their students the economic truth that all jobs may ultimately take you to riches and respectability, provided that you are hard working, persevering and bold. There is no substitute for these qualities even in white collar jobs, to say nothing of other careers. None but the brave and the persistent deserve the fair.

I thank you again for your very kind invitation to be present to-day and to talk to you. For I have come to an age where one likes company and loves to talk. Your invitation has served to provide me with both. I wish your University and your graduates a prosperous and fruitful career in the service of this country.

J A I H I N D

FAMILY INTERACTION DUE TO THE PRESENCE OF AN ELDERLY MEMBER

G. B. SAHA

Interaction is the operation of stimulus and response. Social interaction is the basic social process represented in communication and a mutual relationship between two or more individuals (or groups). Interaction between persons is social behaviour. It includes interpersonal communication and involves interdependent behaviour. In the interaction network, the expectations and influences of people on each other rather than the reactions of single individuals to impersonal and non-social stimuli, are seen as primary factors. The outcome of the nature of interaction may sometimes vary from one type to another type of social group.

Family is a primary social group, and interaction is an inevitable fact here. A stimulus from a person produces a response in another which calls forth a new stimulus and so on *ad infinitum*. Each and every family member experiences this circular activity of stimulus and response thereby undergoes changes, and hence growth or deterioration.

The present paper aims at discussing certain aspects of interaction-patterns of family members due to the presence of an elderly member in a very restricted way within a stipulated time period.

The basic interactional complications in a nuclear family may be different from those in an extended family. The traditional joint family in the past which dominated from olden times, tended to be an all encompassing form of life. It was usually an economically independent unit in which all the members worked together to provide sustenance and comfort. This, of course, contributed to a higher rate of interaction among the members. In this context, the family fulfilled economic functions, educational functions and even the functions for socialising the children as well. It was more an institutional type based more on the fulfilment of traditional role-expectations and conformity to traditional norms. In that sense, this type should closely approximate to the constructions of the family with its combination of the powerful sanctions of the mores, religion and subordination of the younger members to the authority of the aged persons. To-day, most of the former functions of the family have been taken up by other agencies

outside the family and due to social and economic changes, the family's functions have come to rest more in the psychological dimensions. The various psychological outlets have to be explored centering only round the husband and the wife in a present day nuclear family. The presence of an elderly person in a family interaction network may contribute positively to the complex of psychological wants of the family. However, with the advent of urbanisation, the clash between the role-expectation and role-fulfilment is becoming inevitable. The problem is sometimes more acute in our conditions when we are in a transitional phase. The conflicts between the retired father and the family of his son (when the son is the bread-earner) or the tension caused due to interaction between the mother and her daughter-in-law, all reflect the essential disagreement between role-perception and role-behaviour. Psychoanalytical insights may unveil the said interaction matrices to a deeper degree from a different perspective.

In the Western culture old age does not bring increasing respect, though it is not always true. In the Western societies there is a trend toward separate living from parents on grand-parents. This obliges the older members of the family to think over the matter whether they will be able to live together or not. Thus a large number of older individuals are isolated socially, and this isolation affects the nature of their relations with their children. The acceptance of the dependency of children on the parents is a very primitive and primary role, whereas the dependency of parents upon the children in late life is a less clearly defined role.²

In urban areas, the aged individual has limited roles to perform for himself or his family. But in rural areas, there are many significant roles for ageing persons and for their maintenance as contributing, rather than dependent members of the family. Usually, families are able to provide for the social and psychological dependency of the children than for that of older adults.³ The expression of care for elderly parents is modified by the income of the adult children.

Interpersonal relationships of the family are particularly significant in influencing what choices are made at critical branching points in the life-span. The models of interpersonal relationships of the individual will affect his relationship to his aged parents as well as to his peers and to his own children. Generally, lower class behaviour is influenced by a struggle for simple subsistence. It tends to be direct and aggressive, but at the same time passive in the sense that general or remote goals are not

worked together. But middle class behaviour is more involved in working toward abstract goals, and tends to be achievement-oriented.¹

Contrary to popular notions, aged persons who live in their family are not necessarily happier or freer of psychiatric disturbance. Living with one's family or making frequent visits to them may be evidence of financial need or illness on the part of the aged, rather than of family solidarity and cohesion.²

Hill points out that most old people dislike change, cling to established habits and familiar surroundings, and would prefer to spend their later years in their own homes if conditions were favourable.⁴

Malinowski⁵ remarked that in the patriarchal family, where the authority of the head is based upon his control of the family the young members become hostile towards the old in their struggle to enfranchise themselves as independent members of adult society.

In a study it was found that the dominance relationships between children and their aged parents produced frustrating conflicts mainly centered around the older person's interference in family affairs and personal habits.²

The re-entry of the aged parent into the family may create a situation in which the younger persons interpret this as the devaluation of the elders. As the children watch such treatment of the grandparents by the parents, they will absorb such a pattern toward their elders and may repeat it with their own parents.²

Sometimes adult sons and daughters are responsible for the support of their ageing parents, if the latter are without adequate means of support. It is also seen that an elderly parent in the home of an adult son or daughter is considered to be a problem-member.

Duval (1954) offered evidence of hostility aroused by the aged mother-in-law. She reported that mothers-in-law are much more likely than all other in-laws to be considered meddlesome, possessive, nagging, and a host of other undesirable characteristics. All these unfavourable characteristics are manifestations of the failure of the mothers-in-law to appraise correctly the role expectations which are involved. Conflict with mother-in-law is undoubtedly an example of the inability of the elderly woman to accept a reversal of roles, that is, she fails to realize that she is no longer the parent in control over her child and that, when children marry and establish their own homes they should be recognized as independent and autonomous. In fact, in some cases it may be necessary for the younger person to act as "parent" for his own father or mother.

Another study has indicated how parents may influence the choice of mates of their children. Parental influence was particularly pronounced when a child planned to marry a person of a lower class or of a different ethnic or cultural background. Eighty-one per cent of the cases in which such a possibility occurred admitted they either persuaded or threatened their children with withdrawal of support during the time when they were courting persons of whom the parents did not approve. Parents were apprehensive about the choice of mates of their children because they felt that selection of a mate of a similar race, class and cultural background is important to harmonious intergenerational family relationships. These findings point clearly to the importance of similar expectations between older parents and their children as a factor enhancing continuity and satisfaction in family relations.⁹

In another study it was reported that aged parents are not likely to become dependent upon their children. The great majority of older parents in the study were independent of their children but maintained somewhat close social and affectional ties.

So much about Western countries.

In India the old person had a respectable position in the family. This was especially true in the joint family system. Before taking any decision regarding any matter every member took advice from the aged person in the family because they thought him to be experienced and wise in every respect. The presence of an elderly person in the family ensured the sense of (psychological) security for other members of the family. In case of any emergency the family members can depend upon the elderly person; this dependency relieves others to a great extent of undue tension and ultimately helps in the maintaining of proper mental health. On the other hand the children of the family can get due attention and affection from their grand-parents when they have less opportunity for constant company of their young parents. Elderly persons reciprocate their feelings with their grand-children. This kind of interaction between the elderly person and the children channelises emotional tension for both; and can ensure family peace. But sometimes conservative attitude of the elderly member also creates disturbance in the family.

India of to-day is affected by many of the changes originating in the West especially industrialism. The traditional Hindu joint family is disintegrating and the nuclear family has begun to take its place. Consequently, the respected position of old parents is disappearing gradually. It is often seen that the elderly man lives on the sympathy of

other members in the family. In most cases he is unwanted and sometimes it creates a problem among his sons as to who will take the financial responsibility to maintain him. In this way the old man in the family becomes a liability in place of being an asset.

There is no question that old age is a special and potentially difficult time of life; and the later years pose serious problems of adjustment, including problems of adjustment to changing status within the family. Problems of old age in the Western countries differ widely than those of our country. In the West most of the elderly people are isolated from their families and live in homes meant for them. But this is not the case in India. Naturally old age problems in our country are not as much acute as in Western countries. Fewer studies in this direction have been carried out in India in comparison with the Western countries. But from the psychological view-point it is important to have extensive studies in this particular area. We have to understand the problem seriously to help the old persons as well as other persons in the family to adjust themselves in the family set-up as well as in the society.

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DAVID HARE AND RAM MOHAN ROY IN THE EDUCATIONAL FIELD IN BENGAL.

DEBAL KUMAR CHAKRABARTY.

"Report me and my cause to the unsatisfied"—this has been not only the valedictory request of the Prince of Denmark but also an implicit appeal of all great men at the bar of posterity. A fresh and objective reappraisal of the nineteenth century stalwarts in the social and educational fields is called for. It seems to us that the myth of the monopoly of the great Raja Ram Mohan Roy in all these spheres is receding further and further.

In every progressive movement of the first half of the nineteenth century we never miss David Hare in the vanguard upholding the cause of the people of this country. He came to Calcutta as a watch-maker and made a foreign land the land of his adoption. He worked ungrudgingly and ceaselessly as a disinterested philanthropist for the moral and intellectual uplift of the Indian youth. He mixed freely with the natives of Calcutta. His heart bled when he saw that they were grovelling in ignorance and superstition. As an individual he consecrated his time, energy and money to the task of dissipating this all-pervading darkness and of disseminating the blessings of the western education. In his noble mission, he made common cause with both the conservatives and progressives among the Hindoos. In the matter of religion he evinced rare foresight, common sense and pragmatism. As an individual he made the British rulers aware of their duties and responsibilities towards India.

Hare did not get himself embroiled in religious abstractions and subtleties when Ram Mohan established *Atmiya Sabha* and thought of spreading Vedantic philosophy as a step for subverting Hindu idolatry. Hare adopted more effective ways and means for the furtherance of an almost identical cause. He realised that proper education was the sore need of the hour.

To him the dichotomy of religion and education was irrelevant. Hare kept himself away from religious controversies which might stir up a nest of hornets and ultimately frustrate his sole mission of life i.e. the dissemination of liberal education among the natives. He kept religion at bay, prompted partly by firm conviction and partly by expedience.

Ram Mohan's reformist activities sometimes suffered from inconsistencies. About this time *Atmiya Sabha* was established by Raja Ram Mohan Roy who later on wrote a very persuasive letter to Lord Amherst, Governor General in Council in 1823 against the establishment of a new Sanscrit school in Calcutta. Though the top-ranking Hindoos helped much in the founding of the Hindu College, religion was curiously omitted from the curriculum of the College. When the Society for the Acquisition of General Knowledge came into being in 1838, Hare became its Honorary Secretary. In this Society the ubiquitous man was perhaps instrumental in excluding religious discussions of all kinds. Religion, too, was excluded from the books published by the School Book Society (1817). Ram Mohan made formidable enemies in his pugnacious attitude towards the Hindu religion. In accounts of the educational reforms of the first half of the nineteenth century we come across the name of the accredited conservative like Radha Kanta Dev. But strangely enough the name of Ram Mohan Roy, the great social reformer of those days did not figure much in the educational reforms.

It appears from authentic records that Hare did not rest content with imparting literary education to the Indian youth whom the philanthropist foreigner looked upon as his intellectual wards. He was a dynamic personality who was anxious for the all-round intellectual development of the boys who constituted his charge. On June 4, 1817 the Calcutta School Book Society was established for the preparation, publication and cheap or gratuitous supply of useful school books, other than religious, in English and Oriental languages. These books were originally meant for native indigenous schools. Hare was intimately connected with the Society from its very inception and annually subscribed Rs. 100/- to its funds from the first year till his death. A good number of the indigenous schools known as Pathshalas received his very kind attention and patronage. Hare superintended the regular Bengali School at Arpooly and conducted it at his expenses. His own school at Pataldanga was of course his direct concern. But for the edification of the students of the upper forms in his own school he secured for them the privilege of attending the educative lectures of Dr. O'Shaughnessy on Chemistry and Natural Philosophy. A teacher of his school joined the Medical College and rose to be a famous physician of Calcutta. He was no other than Dr. Durga Charan Banerji, father of Sir Surendranath Banerji. Thus Hare did his humble best in coordinating education at diverse stages. The necessity of disseminating knowledge through the medium of the vernacular was not lost sight of by Hare. When the

Managers of the Hindoo College established a Bengali Pathshala, David Hare laid the foundation of that Pathshala on June 14, 1839.

Hare possessed unique moderation and tact in his reformist zeal. The Medical College was established in 1835 in Calcutta. Hare ascertained the susceptibilities of the Hindoos regarding the dissection of the dead bodies. He requested Modhusudan Gupta, the then professor of the Sanskrit Medical Science of the Sanskrit College to see whether the Hindu Shashtra sanctioned the dissection of dead bodies. When Mr. Gupta answered him in the affirmative Hare felt relieved and plunged himself headlong in the spread of the Western medical science in Calcutta. That incident amply proved that Hare did not unnecessarily hurt the religious sentiments of the Hindoos though perhaps he was himself an agnostic. Hare was a subscriber to the "Ladies Society for Native Female Education" established in 1824 and he graced by his presence periodical examinations of the Hindoo girls which were held at the residence of Raja Radhakanta Deb. Thus in his noble mission he identified himself with the conservatives as well as the progressives among the Hindoos, without in the least antagonising them. By providing liberal western education Hare tried to salvage the Hindoo youth from the swamp of idolatry, bigotry and superstition. He made common cause with Derozio, who was successful in promoting a spirit of enquiry and free-thinking among the youth of Bengal and in unleashing a mighty upheaval of moral and social rejuvenation. Hare befriended Derozio, inspite of the great difference in their ages. He loved and respected the young Derozio who might be called as the morning star of the Bengal Renaissance. In Derozio's second letter to Dr. H. H. Wilson, the former powerfully refuted the charge of inculcating Atheism to the college students which was levelled against him. He humbly submitted in this connection that he acquainted the college students with the substance of Hume's celebrated dialogue between Clenthes and Philo in which the most subtle and refined arguments against Theism were adduced. But at the same time he found it obligatory for him to furnish the college students with Dr. Reid's and Dugald Stewart's more acute replies to Hume, replies which continued unrefuted. He contended that if the religious beliefs of the students had become unhinged the fault was not his. He presented the principles of Theism and Atheism side by side without taking sides. He cogently and humorously argued that if he were condemned for the Atheism of some, he should have received credit for Theism of others. He just enlightened the plastic and enquiring mind of a student without resorting to any dogmatism in religion.

This spirit of enquiry and open-mindedness of Derozio was 'the head and front of his offending' and this scientific attitude of Derozio was perhaps admired and supported by a kindred soul who was no other than David Hare himself. Even in the memorable meeting when the bonafides of Derozio were questioned David Hare along with Dr. H. H. Wilson voted against the resolution of dismissing Derozio as a teacher from the Hindu College. Hare expressed the conviction that such an able and efficient teacher of Derozio's stature could not be replaced. Later on, when a fresh resolution was tabled on the expediency of Mr. Derozio's dismissal, true to his salt, Hare, being a foreigner, refrained from voiting, preferring to remain neutral on a matter which concerned communal feelings. Here perhaps Hare's partiality for Derozio courted an easy defeat in his ever-wakeful concern for the greater interest of the Hindu community. The endearing personality of David Hare elicited warm felicitations and acknowledgements even in his lifetime from the leading Hindoos of those faction-ridden days.

Ram Mohan looked askance at education unconnected with religion, imparted in the newly-started Hindu College. A few days after the foundation of the College a person was once speaking to Ram Mohan about a common acquaintance: "Dewanji, that gentleman was once a polytheist, then he became a deist and has lately been turned into an atheist". Ram Mohan quipped, "At last he would perhaps be a beast".

In 1830 when Alexander Duff sought Ram Mohan's help in founding in Calcutta an institution for the propagation of the Gospel through education Ram Mohan forwarded his missionary interest. He went to the extent of housing the institution in the residence of the Feringhee Kamal Bose, formerly used by the Brahma Samaj. He even went to the length of procuring the first batch of 6 students for this institution. Thus he indirectly helped the proselytising activities of Christian missionaries. But Hare did just the opposite. An anecdote testifies to the fact. Once Lal Behari Dey, when a student, approached Hare with the request to admit him into his school. Hare, at first, acquainted himself with the curricula of the boy who happened to be a student of the General Assembly's Institution. When he learnt that the Bible was included in the curricula he told him plainly that Mr. Dey was a 'Half Christian' and as such he would not be allowed to enter his school as he would 'spoil' the other boys of his school.

David Hare is often described as an agnostic. He evinced want of faith in religion. But his own dedicated and disinterested life shows

him as an upholder of all that is good and ennobling in religion. Like Mr. Benson in Thackeray's *Esmond*, one can say "I know not what the Colonel's doctrine was but his life was that of a veritable Christian". In this respect, Hare's position is very much comparable with that of Iswar Chandra Vidyasagar—both of them are believed to be agnostics, being in reality, supermen of the nineteenth century who worked for the welfare of the poor, benighted and disinherited people.

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LOGIC OF CREDIT PLANNING IN INDIA

AMARENDRANATH PAL

The central problem of economic planning is concerned with the task of allocating in a planned manner the limited productive resources so as to ensure the attainment of a set of pre-determined objectives within a specified period. An economic plan, for its success, should maintain two kinds of balances, physical and financial. The basic problems involved in any planning exercise are : (i) the mobilisation of resources for purposes of productive investment, and (ii) the direction of the investment into proper channels. The problems can be tackled if there is financial balance in the plan. The financial balance of the plan maintains monetary equilibrium—an equilibrium, among other things, between the incomes of the people and the amount of the basic consumer goods available to the people. In case of any disequilibrium between the two, there would be lack of stability leading to inflationary gap if the purchasing capacity of the people would be greater than the available goods and services, and deflationary gap in case the purchasing capacity or effective demand of the people would fall short of available goods and services. Thus the financial balance must establish an equilibrium between the part of the incomes of the people devoted to consumption and the output of consumer goods. There should also be an equilibrium between the part of the incomes of the people used for private investment and the amount of investment goods available to private investors. Thus, financial planning which is an essential aspect of financial balance is indispensable for the smooth implementation of an economic plan in general. This is particularly true of the type of planning we find in India. Credit planning is an instrument which helps the planner to ensure proper financial planning as a pre-requisite to financial balance.

The question of credit planning was practically neglected in the early years of planning in India. Monetary policy in the early fifties was virtually related to a package of credit control measures. The promotional role of monetary policy did not receive much attention of the authorities at that time. Credit control policy was at that time primarily guided by the objective of ensuring price stability. Growth-objective of monetary policy was then a secondary consideration.

During the Second Plan and subsequent plan periods, the Reserve Bank of India, to control the pressure of inflation, took active monetary

policy in three ways—(i) limiting the total amount of outstanding credit with seasonal variations for purpose of stabilising the price level, (ii) preventing the misuse of credit for the speculation purposes or holding excess inventories of agricultural commodities and (iii) providing sufficient credit for production purposes¹.

In the context of plans for economic development, the method of credit policy vis-a-vis credit planning put a big question-mark before the planners as to its smooth operation. Since the inception of the economic planning, the credit policy followed by the Reserve Bank of India, though basically sound and strong, was sufficiently flexible in its working to meet the needs of a developing economy. But the policy was not free from deficiencies which were reflected in the inconsistency between granting the amount of credit to the various sectors and sub-sectors of the Indian economy and the targets and requirements of the Five-Year Plans. The deficiencies or the discrepancies were found between the plan targets and the achievements due to (i) credit policy of the central bank minus a credit plan and (ii) questionable methods and the procedures of granting advances by the commercial bank having no scope of a credit plan. So credit planning is essential to gear the production investments in conformity with the plan targets. The existing policy followed by the commercial banks should be modified in the line.

The existing banking system mobilises savings of the community by way of accepting deposits and meets the credit requirement of industry, trade and agriculture by way of making advances as loans. The banks are primarily the source of finance. The allocation of bank credit should be made in accordance with the priorities set out in the plan. But care should be taken keeping in view that such deposits should be employed as loans for the purpose of working capital vice fixed investments, because the bulk of bank resources so advanced are the community's savings withdrawable on demand or notice by the numerous depositors. Besides, it is strongly believed that maldistribution of credit gives more opportunity to the rapid growth/expansion of the non-priority industries than the priority sectors which stagnate before the beginning of the Fourth Five Year Plan. The sectoral and income disparities widen extensively in the economy due to the improper and unproductive investments of credit. That necessitates the close coordination between the credit mechanism and the planning mechanism to correct such imbalances².

It is relevant and interesting to note here that the rural economy had not sufficiently been benefited by the credit policy of the commercial

banks prior to 1969. In the rural area, the smaller centres received much less credit in relation to what they actually needed or what they contributed by way of deposits. In 1965, the commercial banks made a little over 10 per cent of the total advances to the small centres, whereas these centres contributed about 18 per cent of the total deposits. On the other hand, metropolitan cities with population of over 10 lakhs contributing about 48 per cent of the total deposits received about 63 per cent of total advances. Cities with population over 1 lakh accounted for about 84 per cent of the total bank credit whereas all other centres in India, covering the vast rural areas are estimated to have received only 16 per cent of the total bank credit. The credit-deposit ratio stood at about 39 per cent at the smaller centres i.e. with population below 50,000, whereas in metropolitan cities, it stood at over 90 per cent.³ In certain metropolitan cities, the credit-deposit ratio actually exceeded 100 per cent. In Madras, Ahmedabad and Calcutta, the credit-deposit ratio was 141 per cent, 118 per cent and 107 per cent respectively. In Bombay it was only slightly lower at 95 per cent. This clearly meant that there was a reverse flow of funds from the rural to the urban areas through the commercial banks. There was a similar reverse flow from relatively underdeveloped states. At the end of 1965, the credit-deposit ratio was 34.5 per cent for Assam, 43.6 per cent for Bihar, 53 per cent for Orissa as against 38.7 per cent for Maharashtra, 122.8 per cent for Madras and 93.1 per cent for West Bengal.⁴

The reason for such unusual happenings is that there was a massive flow of commercial bank's credit to industries. Many of the new industries in the private sector during the Plans were set up at the vicinity of metropolitan cities. Secondly, commercial banks did not take much interest in the financing of agriculture or village and small industries due to administrative risk and lapses. But after the onset of the green revolution, particularly for high yielding varieties of crops, agricultural needs for finance are increasing rapidly. According to the Rural Credit Review Committee, the total production credit requirements in 1973-74 was estimated at Rs. 2,000 crores. The consequence of the credit policy followed by the commercial banks was the diversion of credit from trade and commerce to industry before the Fourth Five Year Plan.

To meet the needs of the priority sectors and to keep pace with the targets and strategies of economic planning a need for some sort of credit planning for both macro and micro-economic dimensions is felt. The production sectors of the plans should be ensured to have

the necessary credit facilities. The mobilisation of resources by the financial institutions forms a part of credit planning. The credit planning implies a credit policy which forms an integral part of a monetary policy, further it signifies the mode of estimating credit requirements, a process of granting and of supervising the end-use of credit.

The credit planning has to be done at the central level and for this purpose suitable co-ordination has to be maintained between the Banking Department already set up in the Ministry of Finance after the nationalisation of major banks, National Credit Council, the Planning Commission and the Reserve Bank of India. There is a mixed economy in India. Private enterprise here has an important role to play. So the responsible bodies of industry, trade and agriculture have also to be brought into the fold of credit planning process. The credit planning authority should ascertain the requirements of working capital of the various sectors and divide the requirements into two classes : (1) those for transaction purposes and (2) those for carrying stocks of inventories.

If the banks are left with funds after meeting the demands for working capital by way of short-term finance, they should be lent for investment purposes. The investment of such funds should be allocated to the priorities of the Plan, but should not go beyond the limits of the total resources available. The priority sector and backward regions should get favourable treatment in respect of terms and conditions of granting this investment credit like that of credit so granted from the Government-sponsored institutions.

Pre-requisites of Credit planning.

The pre-requisites of credit planning require that the registration of all bank credits as also other credits given by medium and long-term lending institutions should be centralised. The registration of each borrowing firm should be made with the purpose for which the credits are granted. Such registration will provide information of the amount of total bank credit and other credits given to large business groups. Secondly, the order of priorities as envisaged in the plan is sufficiently well-known. The Planning Commission while fixing the priorities should consider the availability of resources from both the banking sector and other financial institutions to implement the plan programmes. The targets of production and investment should suitably be adjusted with the development of individual firm and groups of firms in the same as

well as related sectors. The credit availability and internal financial resources of firms should be made to suit the allocation of scarce and real resources.

Credit planning and Lead Bank Scheme.

The concept of credit planning at the district level with special reference to Lead Bank Scheme is required to be examined. The main facets of the idea of the concept of credit planning are as follows :—

(1) Credit allocation to plan priorities :—Under the planned economy in India, the main object of credit planning is to achieve in full the plan targets of output and investment and to even out the implementation of the plan programmes by the proper distribution of available monetary resources of the community. This concept of credit planning should evolve organisational and procedural safeguards for commercial banks to avoid any over-financing or under-financing of industry.

(2) Sectoral Credit allocation :—On scrutiny it was found in the credit operations of commercial banks that the large scale industries enjoyed a lion's share of credit in comparison with that of other important productive sectors of the national economy, such as, small scale industries, agriculture, small business etc. which were declared as priority sector by the planners. The commercial banks were directed to channel credit to the priority sectors in keeping with the spirit of the planned targets. Consequently, the commercial banks followed this public policy and there was a large increase in the credit to the priority sectors. The share of small scale industries and agriculture in the total bank credit increased from about 3.9 per cent and 0.2 per cent in March, 1966 to 10.4 per cent and 8.9 per cent respectively in December, 1970. Now the bankers are at a loss to know to what extent they should restrain credit-flow to the large scale industries in order to meet the needs of the priority sectors, because the concept of reallocation of bank credit to different sectors on the basis of priority has not been fully materialised.

(3) Regional credit allocation :—The regional disparities were found in the development of banking in India in the matter of distribution of offices and allocation of credit by commercial banks. It was highlighted from the recent studies that there was an out-flow of funds through commercial banks from the rural to the urban areas and from the less developed states to the more developed ones. To check the unbalanced operations of commercial banks, a methodical programme

was launched in respect of branch expansion and the policy of credit allocation. The shift in credit policy is being encouraged in favour of agriculture, small scale industries, retailers etc. which are predominant in the backward areas. The change is in the formative stage. The systematic planning of credit requires to be done.

(4) District Credit Planning :—In the different regions of the country, the districts are allotted to the commercial banks to meet the credit needs of the neglected sectors of the district economy and weaker sections of the community and these banks are expected to play a leading role of a consortium leader of financial institutions under the lead bank scheme, and as an instrument of development planning, these banks will serve as a catalytic agent of growth in the district.

Problems of district Credit Planning

There are many problems in the district credit planning. It is found that many areas of the country are top-heavily developed due to infra-structural facilities. This is a major constraint on development as well as the viability of enterprise. Another problem faced by the credit planning authority is the slow pace of monetisation. The credit institutions will not be able to recover their credit unless surplus produces are exchanged for money. In brief, economic operations are to be monetised. The large sections of population are not economically viable. Those who depend on agriculture constitute agricultural labourers practically with no land to cultivate. The agricultural labourers constitute 16.7 per cent of the total workers in India and this proportion varies considerably from district to district. Their incomes are insufficient to support their family. Any increase in their income brought by the credit institutions in their productive capacity gets eventually absorbed for maintaining their family. So they will not be able to repay their loans to the credit institutions till the primary needs are met. But due repayment of loan is the very basis of credit. In view of the facts, the district planning must be preceded to or accompanied by infra-structural development and there must be simultaneous institutional arrangements to make the non-viable section of population viable and credit-worthy.⁵

Lead Bank Scheme.

In October, 1968, a Study Group was constituted with the approval of the National Credit Council under the Chairmanship of Prof. D. R.

Gadgil to find out ways of building up an appropriate organisational framework for the banking system for meeting the problems of credit gaps of the economy. The report was submitted in October, 1969. One of the important recommendations was that an area approach would need to be adopted by the commercial banks to identify and study local problems and evolve an integrated credit plan for the area.

In August, 1969, the Reserve Bank of India appointed a Committee of Bankers with Sri F.K.P. Nariman as the Chairman to evolve a co-ordinated programme of the setting up of banking institutions in the under-banked districts of the country. The committee in its report recommended that banks would be allotted specific districts where they would take lead in surveying the potential of banking development. The Reserve Bank of India accepted this and evolved the Lead Bank Scheme under which districts were allotted to the State Bank of India Group, the fourteen nationalised banks and two other Indian banks. Virtually, the whole of the country save and except Greater Bombay, Calcutta, Madras, the Union Territories of Delhi, Chandigarh and Goa, had been covered in this way. A Lead Bank in a district would be required (i) to survey the resources and potential for banking development in its district, (ii) to survey the number of industrial and commercial units and other establishments and farms which depend primarily on moneylenders, (iii) to examine the facilities for marketing of agricultural produce and industrial production, storage and warehousing space and the linking of credit with marketing in the district, (iv) to survey the facilities for stocking of fertilisers and other agricultural inputs and for the repair and servicing of the equipment, (v) to recruit and train staff for offering advice to small borrowers and farmers and for the follow-up and inspection of end-use of loans, (vi) to assist other primary lending agencies and (vii) to maintain contacts and liaison with Government and quasi-Government agencies.⁶

Under the lead role, the banks are expected to act as consortium leaders to bring about a co-ordinated development of co-operative and commercial banking and other financial institution in their respective districts. The main task of the lead banks is to estimate the deposit potential and credit gaps and then suitable measures are to be employed to tap the deposit potential and fill the credit gaps. Secondly, what is more important is not quantification of deposit potential or credit gaps but their identification and subsequent elimination for improvement in the district economy.

Credit planning by the nationalised banks has been sought to be achieved through branch expansion, deposit mobilization and introduction of purpose-oriented lending policy in compliance with the requirements for planned economic development of our country. It is noteworthy that of the 12,677 new bank offices opened during the seven-year period since nationalisation of the fourteen big commercial banks in 1969, the share of unbanked centres was 5900 offices. The average population per bank office has now been reduced from 65,000 in June, 1969 to 26,000 in April, 1976. Half of the total of new offices opened since nationalisation was by the 14 nationalised banks. At the end of April, 1976, there were 7499 rural offices accounting for 36 per cent of the total bank offices in the country. During the last seven-year period total bank deposits rose more than three fold from Rs. 4,646 crores to Rs. 15,056 crores at the end of June, 1976. The performance of the banks in regard to branch expansion and deposit mobilisation is expected to go a long way towards proper implementation of the scheme of credit planning system, one important aspect of our programme for economic development is one of ensuring all-round development of the rural economy. Even a decade ago, there had been a large non-monetized sector in the rural economy of the country. The commercial banks have been assigned the job of tapping the real savings in the rural economy so that these savings could be utilised for the financing of our economic plan. The nationalised banks have also already given a new direction to the banking system as a catalyst for development. They have made a major thrust into rural areas with the setting up of 20 regional rural banks and a steady expansion in branch network and deposit mobilisation in recent years. In spite of some gains, the banks have faced a stupendous task in providing adequate credit for agriculture and rural development. The public sector banks under the coordination of the Lead Bank in each district have been, no doubt, following a purpose-oriented leading policy giving financial assistance liberally to the priority sectors, particularly to agriculture, small entrepreneurs, small trade, retail trade and transport operators. But despite a definite shift in the deployment of credit in favour of agriculture and other hitherto neglected sectors, a good deal still remains to be done to take the benefits of banking to small borrowers and other weaker sections of the society. The banks should play a bigger role in supporting small entrepreneurs, food processing programmes, and other growth sectors in rural areas. Simply setting up of rural banks cannot serve the purpose of credit planning in the rural areas. Not only that there should be equilibrium

between demand for and supply of credit in the rural economy, there should also be a thorough scrutiny of the nature of credit requirements and of the method of utilisation of the credit that would be available. Rural banking to be effective should go to the roots of production and service complex instead of dealing with the interested intermediaries who exploit the actual producers and service operators. For augmenting credit facilities in favour of small and marginal farmers and agricultural labourers, it is essential that there should be a more massive expansion of branches in rural areas. This, of course, calls for concerted action from banks as well as State Governments.

In what respects can the commercial banks contribute to the proper implementation of the policy of credit planning in the rural areas? The answer to this question has to be sought in the very nature of the credit requirements of the rural economy consequent upon the recent changes in the economic policy of the Government. The bank should now provide financial assistance to the farmers who have been allotted lands for cultivation following imposition of agricultural land ceilings. Credit facilities may be extended for schemes like raising of crops, land levelling, bunding land development and reclamation, digging of wells, installation of pump sets, purchase of implements, bullocks etc. according to local requirements. Following the liquidation of rural indebtedness and imposition of moratorium on recovery of debt from landless labourers, small or marginal farmers and village artisans, there has been a gap in the rural credit structure, the banks are now expected to bridge this gap. Banks should now help those released from bonded labour for undertaking subsidiary activities allied to agriculture. To strengthen their organisation in extending credit to the priority sectors in the rural areas, banks should follow the area approach scheme wherever it is feasible. Apart from financing agricultural development the banks should also provide credit facilities for the development of handloom industries on a larger scale. The banks should provide credit facilities to the people engaged in this industry for purchase of raw materials and equipments. This can be done by the banks in close collaboration with the Handloom Board.

While the banks have been extending credit in the priority sectors, their purpose is to see that this credit is used as investment credit and not as consumption credit. Investment credit is expected to generate employment opportunities. The public sector banks can definitely help in enlarging employment opportunities under new apprenticeship scheme to enlarge employment and training especially of the weaker sections.

Planning has its objectives of accelerating the rate of growth, ensuring and maintaining price stability, and generating employment opportunities among other things. Credit planning by the commercial banks is just an instrument to help the fulfilment of these objectives. Public sector banks have taken up credit planning as their policy instrument, but its proper application or implementation is yet to be achieved.

Role of the Reserve Bank of India in Credit Planning

In this regard the following measures have recently been introduced by the Reserve Bank of India as the credit planning authority. The Reserve Bank of India keeps a close connection with the Planning Commission having a representative on the Resources Working Group of the Commission. A monetary budget and a credit plan for the Five Year Plan period are prepared by the Reserve Bank as soon as the estimated growth rate in real income during the same period is agreed upon. Secondly, it has a Credit Planning Cell. This Cell prepares a proforma for the banks to enable them to submit their credit plans for one year and the busy season.

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JAYANTA ON THE NATURE OF KARANA

SARBANI GANGULI (CHAKRABARTI).

Generally a *karana* or an instrumental cause is conceived in two ways. First, a *karana* is the final or immediate cause (*carama-karana*); secondly, a *karana* is a cause which functions through an operation (*Vyāpāravat-karana*). For example, in the perception of a pot, the *karana*, according to the first view, is the apprehensional connection (*sannikarṣa*) of the pot with the visual organ (viz. conjunction), whereas, the visual organ is the *karana* according to the second view.¹ It follows from the above that a *karana* is but one of the many factors necessary for the production of an effect. There may be a number of causes, but not all of them can be accorded the status of a *karana*. The view of the grammarians also is similar, for, according to them, a *karana* is defined to be the most efficient cause (*sādhakatama-karana*), which implies that there are ordinary causes too.

While discussing the definition of *pramāṇa* in his *Nyāyamañjarī*, Jayantabhaṭṭa subscribes to a different view as to the nature of a *karana*. Unlike the Naiyāyikas and the grammarians he holds that a *karana* is not a special cause among many causes, but it is a collocation of causes (*sāmagrī*)—an aggregate of all the casual factors necessary for the production of an effect. Thus according to Jayantabhaṭṭa, the word *pramāṇa* is to be applied to the aggregate of the casual factors which are responsible for the production of *prāmā* or valid knowledge.²

Jayanta starts explaining his view by noting first some obvious objections that may be raised against the characterisation of *sāmagrī* as *karana*.

First, a *karana* is defined to be the *sādhakatama-karana*, i.e. the most efficient one of the causes producing an effect. The suffix *tama* implies the superlative degree and hence the word *sādhakatama*, since it becomes a relative term, can be rightly applied to only that particular cause which can be singled out of many causes because of some excellence of its own, not shared by anyone of the other causes. All this presupposes that we can speak of a *karana*, only if there are many causal factors. But *sāmagrī* which comprises each and every factor contributing in any way to the production of the effect is one and undivided. There is no other causal factor outside *sāmagrī* may be considered more

efficacious. Thus the definition of *karāṇa* is simply inapplicable to *sāmagrī*.

Secondly, it is generally observed that a *karāṇa* has a distinct object to operate upon. In the act of cutting, for instance, the *karāṇa* is the axe and the object, a piece of wood. If, however, *sāmagrī*—and not any individual cause—is identified as the *karāṇa*, the object too will be included in *sāmagrī* and thereby is to be given the status of *karāṇa*. This as *karāṇa* will become objectless (*nirviṣaya*). Jayantabhaṭṭa, since he discusses the nature of *karāṇa* in the context of the definition of *pramāṇa*, illustrates the absurdity with reference to *pramitti* or valid cognition. The implication of the opponent is that if *sāmagrī* is considered synonymous with *pramāṇa*, the object of knowledge, because of its inclusion in *sāmagrī*, cannot be anything else than a *karāṇa*. In other words, there remains no object which can be said to be revealed by a *pramāṇa*, and this leads to the consequent absurdity that no valid cognition can be produced due to the absence of an object. In the same way the agent who rightly knows (*pramātā*) also can have no separate existence from a *karāṇa*, because of its inclusion in *sāmagrī*. And all this, the opponent urged, goes against the comments of Vātsyāyana which distinctly accord individual status to the members of the group of four, viz, *pramātā*, *pramāṇa*, *prameya* and *pramitti*.³

Thirdly, the identification of *karāṇa* with *sāmagrī* goes against usage also. While indicating a *karāṇa*, one says, for instance, 'I see with my eyes' (the *karāṇa* being represented by the visual sense) or 'I see with the aid of a lamp' (the *karāṇa* being represented by the lamp), but one never asserts 'I see with the aid of an aggregate or a collocation'. It is, therefore, improper to hold *sāmagrī* as the *karāṇa*.

After a statement of the possible charges against the theory of *sāmagrī-karāṇatāvāda*, Jayanta replies to them and establishes his own view.

First, Jayanta argues that the definition of *karāṇa*—namely, the most efficient or important factor contributing to the production of an effect—logically accords well with *sāmagrī* and *sāmagrī* alone, for the capability of producing an effect necessarily—without exception—resides in nothing other than *sāmagrī*.⁴ The presence of *sāmagrī* is immediately followed by the production of effect. But this is not the case with any individual cause, for an individual cause is bound to remain ineffective so long as all the other contributing factors have not assembled there. In other words, this indicates that the potentiality for an effect is present

in the highest degree in *sāmagrī* and hence *sāmagrī* alone deserves to be considered as *karaṇa* or the most efficient cause. Besides, it is not possible to single out any individual cause as 'special' or 'superior', for, as causes, they all have the same status and each one of the causes contributes equally to the production of the effect, which follows from the fact that the absence of even a single factor fails to bring about the intended effect.⁵

The opponent may argue that, though all the causes contribute to the production of the effect, still it is possible to mark off an individual cause as 'special' or 'superior' in relation to the others, the criterion for distinction being a direct or more intimate connection (*sannipatyajanakatva sākṣāt-sambandha*) with the effect. It is true that an effect is produced by the joint function of a number of causes. It is however observed that all the causes are not related to the effect in the same way. The cause which is more intimately connected with the effect is to be singled out as the *karaṇa* and the others which have only remote connection are to be left out of consideration. For instance, for the act of cutting, the necessary factors are an agent, a piece of wood, an axe, the upward and downward movement of the axe and so on. But it is clear that the movement of the axe alone is the cause connected directly and the other causes, since they contribute through the mediation of something else are only remotely so. Hence the movement of the axe may be considered as the most efficient cause of the *karaṇa* in the act of cutting.

To this Jayanta replies that even causes which are remotely connected are indispensable for the production of the effect⁶ and as such all the causes, irrespective of the mode of their connection with the effect, have equal status, so far as the production of the effect is concerned. It is thus unjust to consider some cause as 'superior' and some other causes as 'inferior' merely on the basis of the mode of their connection.

The opponent may try to oppose *sāmagrī-karaṇatā-vāda* with a different criterion. It may be argued that excellence (*atiśaya*) means the capability of producing an effect instantly (*sahasā-kārya-janakatva*). In other words, by *karaṇa* is to be meant that particular cause, the arrival of which is instantly followed by the appearance of the effect. For instance in spite of the presence of the pot, sufficient light, the subject (*kartā*), the visual organ and such other factors, there is no perceptual knowledge of the pot : as soon as, however, eyes are turned

on the pot and there is conjunction between the visual organ and the pot there is instant perception of the pot. Thus this apprehensional connection may be considered as the most efficient cause.

Jāyanta points out that the above too is not logically acceptable, because the *atiśaya* or excellence (i.e. capability of producing an effect instantly) which is supposed to be the essential property of *karāṇa*, may as well be present even in some other causes such as the 'object' (*karma*). For instance, in a dark night of the rainy season a passer-by may have a glimpse of a lady as the lightning flashes for a moment. Here according to the opponent's interpretation, the lightning is the *karāṇa*, for as soon as the lightning flashes, the visual perception takes place. But Jāyanta contends that even then the opponent's view will lead to an absurdity. The said form of *atiśaya*, it may be shown, is present in what is admitted by all as the object or *karma* and thus the *karma* too will have to be considered as nothing but a *karāṇa*. In the above illustration given by the opponent, one may argue that in spite of the flash of lightning and the presence of the passer-by there is no visual perception so long as the lady does not happen to be present there. As soon as she reaches the particular spot, at the very moment, she is visually perceived. Thus the capability of producing an effect instantly is shared by the lady also, though she is actually an object (*karma*).

Jāyanta therefore concludes that excellence or *atiśaya*—the distinctive mark of a *karāṇa*—is to be conceived as nothing but 'being invariably attuned with the effect.' That is, a *karāṇa* stands for what is invariably and immediately followed by the production of the effect. No individual cause can share such excellence for it cannot be followed by the production of the effect *always*—in case the other causes are absent, its presence alone can do nothing. Collocation or *sāmagrī*, consisting of all the necessary factors, however, is invariably followed by the immediate production of the effect, for the presence of the collocation or *sāmagrī* implies that there is nothing more than the absence of which may be conceived as preventing the appearance of the effect. In short, collocation alone rightly deserves to be called a *karāṇa*.

In reply to the charge that *sāmagrī* being one, the definition of *karāṇa* (viz. *sādhakatamaṃ karāṇam*), which presupposes the presence of many factors, does not apply to it, Jāyanta says that *sāmagrī* may be considered more efficaciously in comparison with any one of the individual causes included in it. The different causes, even when they are united together and form the *sāmagrī*, do not lose their respective

properties or identity, for even in that stage we recognise them as such.⁸

Now the question arises : 'Is *sāmagrī* an entity distinct from the aggregate of causes or not'. The first alternative is untenable ; for we are never aware of any separate entity—over and above the aggregate of causes—in the form of *sāmagrī*. When the various causes—retaining their individuality—assemble together we have the notion of *sāmagrī*. But this assemblage does not give rise to anything new and as such *sāmagrī* cannot be admitted to be anything else than the mere aggregate of causes.

Again, the acceptance of the second alternative (viz. *sāmagrī* is identical with the aggregate of causes) leads us to an absurdity. Since *sāmagrī* is equated to *karaṇa*, all the causes comprising it will have to be given the status of *karaṇa* and there will remain no cause which can be designated by the term *ka-tā* or *karma*.

In reply, Jayanta says that the existence of *sāmagrī* cannot be denied, because it is proved by perception. When we perceive things like the pot, water, fire, rice etc. separately, in different places, we do not recognise them as *sāmagrī*. But when the same things are assembled together with a view to performing the act of cooking, we cognise them as *sāmagrī*. It is true that no new entity is produced from this assemblage of causes, still, this does not disprove *sāmagrī* which implies the collectivity of all the necessary factors. Thus *sāmagrī* is to be considered as 'most efficacious' in comparison with the causes taken individually. The individual causes, when they are assembled together and form *sāmagrī* do not lose their own characteristics. So the charge that there can be no valid cognition or *pramā*—if *sāmagrī* is considered as *karaṇa*—because the object of *pramā* is included in *sāmagrī* and thus shares the status of *karaṇa* is not tenable. There will thus be no difficulty in explaining the four-fold classification of *pramāta-pramāṇa-prameya-pramiti* also.

In reply to the charge that the identification of *karaṇa* with *sāmagrī* goes against usage, because the termination for the instrumental (*karaṇa-vibhakti*) is never added to *sāmagrī*, Jayanta says that *sāmagrī* is nothing but a collocation of causes, which implies that *sāmagrī* is identical with each of the various causes forming it. Thus the termination for the instrumental can be used with *sāmagrī*, only if the significance of the termination agrees with each individual cause within the aggregate or *sāmagrī*. This is however not possible, for the individual causes are each of a different nature and retain their own characteristics even in the

state of *sāmagrī*. In short, the word *sāmagrī* is never used with the termination for the instrumental, because such a termination is not compatible, in a sense, with all the constituent causes of *sāmagrī*. Now one may ask how is it that in common usage only some particular causes are used with such a termination (the lamp or the visual organ in the act of seeing for instance)? Jayanta answers that these are only cases of imputation (*āropa*).⁹ The distinctive mark of *karaṇa* (viz. being invariably followed by the effect), though really a property of *sāmagrī*, is imputed by the speaker to some particular cause forming the aggregate and hence the termination for the instrumental is added to it. Such cases of imputation are not rare in general use. For instance, in the act of cooking, the speaker being desirous of conveying the excellence of the cooking pot may invest the nature of *karaṇa* upon it, though the cooking pot is really the *adhikaraṇa* and we may have the usage *sthālyā pacati* which is quite justifiable.

Thus Jayanta concludes that logically, *sāmagrī* or the aggregate of causes alone can have the status of *karaṇa*.

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1. For details, see Y.V. Athalye (explanatory notes on *Tarkasaṃgraha*, pp. 186 f.)
2. avyabhicāriṇīm asaṃdigdhām
arthopalabdhīm vidadhatī
sāmagrī pramāṇam.
3. Vātsyāyana on *Nyāya-sūtra* i.1.1., introduction.
4. yata eva sādhakatamaṃ karaṇam,
karaṇa-sādhanaś ca pramaṇa-śabdah
tata eva sāmagryāḥ pramāṇatvaṃ
yuktam.
5. aneka-kāraka sannidhāne kāryaṃ g'atamānam anyataravyapaṇame ca
vighnṭamānaṃ kasmai atīśayaṃ prayacchet, na cātīśaḥ kārya-janmani kasyacid
avadhāryate, sarveśāṃ tatra vyāpriyamāṇatvāt.
6. ārād-upakārakāṇām api kārakatvānapāyāt.
7. tasmāt phalotpādāvinābhāvi-svabhāvatvam avāśyatayā kārya-jāakātvam
atīśayaḥ.
8. yat tu kimapekṣaṃ sāmagryāḥ karaṇatvam iti, tad-antargata-kārakāpekṣam
iti brūmaḥ etc. This point has been explained somewhat differently by Pañcānana
Tarkavāgiśa (*Nyāyamāñjarī* with Beng. Tr. and notes, vol. I, Calcutta 1939, p. 108).
According to him, the implication here is as follows : When an aggregate of causes or
the *sāmagrī* occurs, there is no new or separate function (*vyāpāra*) as located in the

sāmagrī. That is, the *sāmagrī* is something without a function (*nirvyāpāra*). But *karāṇa* is a cause that operates through a function. How then can *sāmagrī* be given the status of *karāṇa*? To this Jayanta answers that though *sāmagrī* has no special function of its own, still the Particular cause which operates through a function (and is singled out as the *karāṇa* by the opponents) is included in *sāmagrī*. As such *sāmagrī* also is to be considered as having a function, though indirectly, since one of its essential constituents is the cause with the function (*savyāpāra-kāraka*).

9. Yas tu dīpendriyāṇāṁ tṛtīyā-hirdeśaḥ sa phalopajananāvinā-bhāvi-svabhāvat-vākhya-sāmagrī-svarūpa-samāropana-nibhana.

10. Pañcānana Tarkavāgīśa (*op. cit.* p. 121), quoting a verse from the *Śloka-vārtika* (pratyakṣa-sūtra kārīkā 60), says that this theory was not an invention of Jayantabhaṭṭa, but is really first hinted at by Kumārila. Pt. Mahendrakumara Nyāyāśātri (*Nyāyakumudacandra*, vol. I. Bombay 1938, Hindi introduction p. 10) however, says that the first reference to this theory is to be found in *Vyomavati*, a commentary on Praśastapāda's *Padārtha-dharma-saṁgrāha*, though the credit of fully elaborating and defending it goes to Jayanta only.

An elaborate refutation of this theory is found mainly in the writings of the Jainas: *Nyāyakumudacandra* (*op. cit.* pp. 34-39), *Prameyakamalamārtanda* (Nirnayasāgar ed. Bombay 1941, pp. 7-13), *Syādvādaratnākara* (Arhat Prabhā-kara kāryalaya, Poona, pp. 62-64) and *Sanmatitarka-ṭīkā* (Gujrat Purātatva Mandir, Ahmedabad, pp. 471-72).

A SILVER JUBILEE—1974

INSTITUTE OF RADIO PHYSICS
AND ELECTRONICS, UNIVERSITY
OF CALCUTTA

FROM THE INSTITUTE'S SOUVENIR

[By courtesy of Professor M. K. Das Gupta
M. Sc., Ph.D. (Manchester)]

I

FOREWORD

DR. S. N. SEN, *Vice-Chancellor*

Though the Calcutta University is soon going to celebrate its 118th Foundation Day, its Post-graduate Colleges are much younger in age, most of them having as yet covered about half of the age of the University. The Department of Physics is one of the oldest Post-graduate Departments and has been one of its glories. The Department of Radio Physics and Electronics, or the Institute of Radio Physics and Electronics as it is also called, has grown out of the main Department of Physics, "Wireless" as a subject for special study in the Physics course having been started as early as 1925. It received the status of a separate Department in 1949 under the Headship of Professor S. K. Mitra, D.Sc., F.R.S. Professor Mitra had fortunately inspired a generation of students, some of whom are carrying on his torch with splendid devotion. A teacher has no doubt to teach and guide research in his subject. But he has also to inspire students to take up the task of extending the bounds of knowledge, and of traversing uncharted oceans. He must, if he is at the same time heading a Department, or an Institute, look out for talents from among his students and colleagues, and effectively help in building up potential leaders who would be able to carry on his traditions. Professor Mitra was a teacher belonging to this class, and the result has been that this Department has not lost the momentum of the start which he gave to work and research in this Department even after his retirement. Recognition of the good work

done came with the nomination of this Department as a Centre of Advanced Study in Radio Physics and Electronics. On this day let us gratefully remember this distinguished scholar of our University.

A comparative youngster in the University Colleges of Science and Technology, this Department is now celebrating twenty-five years of its separate existence. These have been years of which any academic institution would be proud—years of hard and steady work and years of fruitful research under the able leadership of Prof. J. N. Bhar, culminating in its classification as one of the 'excellent' advanced centres among Indian universities. Today we are celebrating what a devoted and united band of scholars can achieve when they work in full harmony with one another, ignoring all impediments, obstructions and inevitable failures. The University community of Calcutta are really glad to be present on this happy occasion and wish the devoted professors of this Institute and their able colleagues many more years of advanced work. Let their Gold be more glittering than their Silver.

A SILVER JUBILEE

II

LOOKING BACK

PROFESSOR J. N. BHAR D.Sc., F.N.A.

"Let me hope that in laying the foundation stone of the Institute of Radio Physics and Electronics today, I have planted a seed which will grow into a mighty tree, spreading its branches much beyond the borders of your present expectations. The Institute will become not only an All-India centre of study and research but will also attract earnest seekers after truth from beyond the boundaries of India."

These are the words with which Dr. B. C. Roy, then Chief Minister of West Bengal, concluded his address on the occasion of laying the foundation stone of the Institute of Radio Physics and Electronics on April 21, 1949. A look at the Institute today should convince anybody that the expectations of Dr. Roy are well on the way to fulfilment almost to the word.

THE BACKGROUND

Just about half a century ago, the University of Calcutta introduced for the first time in India, a course in Radio Physics and Electronics in the name of Wireless, a name in vogue in those early days. This, however, formed part of the post-graduate course in Pure Physics.

The ever-increasing applications of radio waves, specially on the eve of and during the Second World War, and the rapid development of electronics as an important science by itself created a new situation. These developments were too extensive to be covered within the narrow compass of a small part of another post-graduate course. A large-scale expansion and reorganization became imperative. To meet this situation the University, on the initiative of Professor S. K. Mitra, accepted in 1946 a plan for the creation of a separate Post-graduate Department for Radio Physics and Electronics by pooling the then existing resources of the Wireless Section of the Pure Physics Depart-

ment and the Communication Engineering Section of the Applied Physics Department.

These resources were, however, too meagre to make a start with and the University began to look for funds to give effect to the plan.

In 1947, the Government of India through the All India Council for Technical Education (AICTE), extended to the University offers of financial grants for expanding and strengthening technological education. A Visiting Committee (Ghosh-Thacker Committee) appointed by the AICTE looked into the plan submitted by the University and recommended the creation of an independent Post-graduate Department for Radio Physics and Electronics.

The full scheme as recommended by the Committee was : creation of a new Post-graduate Department with a 2-year teaching course leading to the M.Sc. degree in Radio Physics and Electronics, with provision for an annual intake of 20 students and research facilities for the training of 8 research workers.

Creation of the Department

Once the grants were sanctioned, no time was lost in implementing the scheme. It was decided by the University to name the department as the Institute of Radio Physics and Electronics. A plan for a two-storeyed building for the Institute was prepared and the foundation stone was laid by Dr. B. C. Roy on April 21, 1949, as stated earlier. Without waiting for the building to be completed, the first session of the 2-year M.Sc. course in Radio Physics and Electronics was started from July of the same year. As the Department had no accommodation of its own, classes were held in different places—in the seminar rooms of the Pure Physics and Applied Physics Departments and even in the lecture hall of the newly constructed Institute of Nuclear Physics. Practical work was conducted in the Pure Physics and Applied Physics laboratories and drawing classes were held in the Applied Chemistry building. The infant Department had thus to struggle hard during the first two years of its existence. The first examination was held in November, 1951, exactly as scheduled.

Meanwhile, the new building was completed and was occupied by the end of 1951. A total floor area of 17,600 sq. ft. was thus made available but it was found inadequate to accommodate all the laboratories and classes. The practical classes on Electrical Machines

and the drawing classes continued to be held in the Applied Physics and Applied Chemistry Departments: the Ionosphere Research Laboratory had to stay in its original place in the Pure Physics Department.

Establishment of the Ionosphere Field Station

With grants received from the Council of Scientific and Industrial Research (CSIR), the activities of the Ionosphere Research Laboratory had expanded considerably by this time. Need was constantly being felt for removing the laboratory to an open site away from the city to avoid static interference which badly hampered ionospheric observations.

But the fulfilment of this requirement was beset with difficulties. An extensive plot of land, a building for accommodating the equipment and the staff and an automatic ionosphere recorder suitable for round-the-clock observations were things not easy to secure for an infant Institute. But the difficulties eventually melted away in the face of sustained efforts. A capital grant of Rs. 84,000 was obtained from the CSIR for the construction of buildings; a plot of land adjoining a deserted village near Haringhata measuring about 150 acres was procured from the Government of West Bengal; and an automatic ionosphere recorder was received on permanent loan from the Commonwealth Scientific and Industrial Research Organization of Australia. The Field Station was made ready by the end of 1954 and regular observations were started at Haringhata in 1955.

THE SECOND STAGE OF DEVELOPMENT

Hardly had the Department come into existence when plans for the expansion of the 2-year M.Sc. course to a 3-year course leading to the M.Sc. (Tech.) degree engaged our minds. This was necessitated by two factors. First, the latest developments in Radio Physics and Electronics could no longer be given adequate coverage within the curriculum of a two-year course. Secondly, a 3-year course would be in conformity with the general pattern of technological education recommended by the AICTE.

A scheme for the introduction of the 3-year M.Sc. (Tech.) course in Radio Physics and Electronics was submitted to the Government of India in 1952 as the second stage of development of the Department. The scheme was finally approved by the UGC on the recommendation of the

AICTE and the formal sanction of grants for implementing the scheme came in April, 1957. In short, the scheme was : conversion of the 2-year M.Sc. course to a 3-year course leading to the M.Sc. (Tech.) degree in Radio Physics and Electronics, with an annual intake of 20 students and provisions for training 8 research workers. It was stipulated that two elective subjects, (i) Radio Engineering and (ii) Radio Wave Propagation and Upper Atmosphere, were to be offered to the students.

Special Course in Advanced Electronics

Long before the grants for the Second Development Scheme were received, a very difficult situation stared the Institute in the face. As the teaching and research activities rapidly expanded since its inception, the initial provisions for accommodation, staff, and maintenance soon proved to be hopelessly inadequate. The ever-increasing work-load demanded much more than normal working hours from each member of the staff, the already inadequate space became heavily overcrowded, and the routine running expenses had to be drastically curtailed due to paucity of funds. For reasons unknown to us, the Second Development Scheme, which was submitted in 1952, was hung up at the Centre. The situation became truly desperate. At this stage, unawares to us, the AICTE selected the Institute as a centre for the organization of a post-graduate course in Advanced Electronics. No time was lost in seizing this opportunity to introduce Advanced Electronics as one of the elective subjects in the third year in the 3-year course proposed in the Development Scheme and a detailed plan was submitted to the Government of India. This time it was promptly approved by the AICTE and on its recommendation, the UGC sanctioned, in 1954, additional grants for building, equipment, staff and maintenance. These grants came to us at the most opportune moment and a difficult situation was tided over.

In 1960, the UGC sanctioned a further additional grant specifically for strengthening researches in Advanced Electronics.

Development of the Ionosphere Field Station

With the shifting of the Ionosphere Research Laboratory to the newly erected Field Station at Haringhata the door was opened for widening the scope of the investigations on the ionosphere as also for participating in the International Geophysical Year (IGY) programme. A plan for the second stage of development of the Field Station was

submitted to the Planning Commission through the CSIR in 1955. After detailed scrutiny the plan was approved and necessary grants were sanctioned for its implementation. However, the CSIR did not agree to release these grants on the ground that it could not support any scheme of a permanent nature and suggested that the responsibility might be taken over by the UGC since the Ionosphere Field Station was part of a university. After prolonged negotiations between the University, the UGC and the CSIR, the UGC accepted the financial responsibility of the Field Station for a period of five years, on the condition that the Government of West Bengal would take over the responsibility at the end of five years. On the State Government agreeing to this proposal, the UGC sanctioned, in 1961, both capital and recurring grants for the development and running of the Field Station. These grants, shown in Table 1, page 22, were to continue up to the end of the Third Five-Year Plan period (1965-66). As agreed to earlier, the State Government took over the financial responsibility from 1966.

Extension of Building and Other Facilities

In 1957, the grants sanctioned by the UGC for the second stage of development of the Institute were received. These grants, preceded by the grants for the Advanced Electronics course received at the end of 1954, enabled the Institute to add two further storeys to the building and to appoint additional staff. A considerable amount of equipment was also added to the laboratories, which were reorganized into the present set of divisions. The library was also substantially enriched by the acquisition of new books and journals, so badly needed in the immediate past. By the end of 1961, the Institute got rid of many of its initial difficulties and the way ahead looked clear and promising.

CENTRE OF ADVANCED STUDY

Soon after, came a major boost that further brightened the path of progress for the growing Institute.

Early in 1962, the UGC recommended the establishment of Centres of Advanced Study (CAS) in selected university departments known for their tradition and promise. The object the Commission had in view was to encourage the pursuit of excellence and to accelerate the realiza-

tion of international standards in the field of post-graduate education and research. In recognition of the tradition built here, this Institute was nominated as one of the first five Centres of Advanced Study in 1961-63. This nomination, with promise of financial assistance to intensify teaching and research activities so as to achieve a high standard of excellence on the international level, inspired the staff of the Institute from top to bottom. United as a team, the members set to work, each in his own sphere, with redoubled vigour.

The UGC's offer of financial assistance to the CAS was to last for ten years, at the end of which either the State Government or the University would have to take over. The State Government agreed to this condition and the UGC's grant for the first five-year period came to the University by the end of 1962-63. By the end of the first five-year period, an Assessment Committee appointed by the UGC to evaluate the work done during this period visited the Centre. On the recommendation of this Committee, the UGC sanctioned further grants for the second five-year period which were received in 1967-68. The details of these grants are shown in Table 1, page 27.

In 1964-65, the UGC, by arrangement with the British Council and the Government of U.K., initiated a collaborative programme which provided for exchange of personnel between the CAS and the University in U.K. and for supply of equipment and books to the CAS, whenever possible.

THE THIRD STAGE OF DEVELOPMENT

In 1969, grants for the third stage of development of the Institute were received from the UGC which recommended drastic changes in the courses to be offered. In short, the approved scheme of development was : (i) conversion of the 2-year B. Tech. course to a 3-year graduate course leading to the B. Tech. degree with an annual intake of 30 students, (ii) conversion of the 1-year M. Tech course to a 2-year post-graduate course leading to the M. Tech. degree with an annual intake of 25 students, and (iii) institution of a 1-year Post-graduate Diploma course with an annual intake of 10 students. The grants sanctioned by the UGC for implementation of the third stage development scheme are shown in Table 1, page 27.

With the financial assistance allotted for the CAS, combined with the grants received for the third development stage, the facilities of the

Institute began to develop as desired. A new multi-storied building came under construction at site adjacent to the Science College campus. Additions to staff, equipment and books paved the way for intensification of activities. The provisions for Visiting Professors, seminars and symposia, travels and personnel exchange facilities substantially accelerated the progress of the Institute.

As initially agreed upon, the UGC's term of financial responsibility for the CAS was to end in 1972-73, but this term was extended for another year (1973-74). The State Government is taking over the financial responsibility from the current year.

Meanwhile, on the report of an Assessment Committee appointed by the UGC to evaluate the performance of the Centre during the first decade of its existence, the UGC classified it as "excellent" and offered to continue grants to the Centre even after the take-over, but on the basis of specific projects submitted by the Institute. The regular commitments of the Centre, as they were just before the take-over, will, however, continue to be the charge of the State Government.

The history of the Institute outlined above is only a summary of its development during the last twenty-five years and of the basic grants received at different stages to sustain this development. For these grants, the Institute remains indebted to the Ministry of Education at the Centre, the Department of Education in the State, the Council of Scientific and Industrial Research and the University Grants Commission. In addition to these basic grants, substantial auxiliary assistance in various forms has been received from persons and from private and public organizations, inside the country and abroad, which affected the career of the Institute in no small way. The Institute owes a great deal to all of them.

While celebrating its twenty-fifth anniversary we remember with reverence the founder of the Institute, the late Professor Sisir Kumar Mitra. We also record our gratitude to the authorities of the University under whose care the Institute has been able to flourish. We pray to God that we may continue to work hard as a united team, as we have done for the past twenty-five years, with unfailing devotion and love for the Institute so that it can maintain the tempo of its achievements and win fresh laurels for our alma mater.

A SILVER JUBILEE

III

FROM THE INSTITUTE'S BROCHURE

RESEARCH : FIELDS OF ACTIVITY

In keeping with the tradition of the Wireless Laboratory (1925-1949), on which the Institute was founded, its research activities in the beginning were confined to the fields of radio and upper atmosphere. Soon after its creation, the fields of interest gradually widened in step with the advancement of radio and electronics, within the limits imposed by available resources. At present, the research activities may be broadly divided into four main fields : (1) Space Science, (2) Solid State Electronics, (3) System Science and (4) Plasma and Quantum Electronics. A short review of the activities in these fields during the last twenty-five years is given below.

1. SPACE SCIENCE

Carrying on the tradition of the Wireless Laboratory (1925-1949), in which lies the root of the present Institute, radio and space research continued to be one of its major interests. When the Institute was founded, plans were afoot to establish an Ionosphere Field Station at Haringhata, 55 km away from Calcutta in the countryside. The Station was completed in 1954. In 1955, an ionosphere recorder (ionosonde), received on permanent loan from the Commonwealth Scientific and Industrial Research Organization of Australia, was installed there. Thus, for the first time in India, a fully automatic ionosonde came into operation. The investigations carried out in this field may be subdivided into three areas : Ionosphere, Radio Wave Propagation and Solar Radio Astronomy.

Ionosphere

Based on the excellent quality of the ionograms obtained with the help of the Australian ionosonde, some important contributions in the

areas of sporadic E and spread F were made. Round-the-clock observation of ionospheric characteristics was started with this ionosonde soon after it came into operation. After nearly a decade, it was replaced by the Type C2 American ionosonde received on permanent loan from the Department of Commerce, U.S.A. The Haringhata Field Station forms part of the world-wide network of ionospheric stations and transmits routine data to World Data Centres through the Radio Science Division of the National Physical Laboratory, New Delhi.

With a view to studying the lower ionosphere, instrumentation for ionospheric sounding by the cross-modulation technique was undertaken in 1968. During the first phase, a 15 kW pulsed transmitter at 2.2 MHz was fabricated and installed at the Field Station. This transmitter has been utilized to investigate the variation of phase path and absorption characteristics of the lower ionosphere. A 50 kW heating transmitter has been completed for use in the proposed cross-modulation experiment and is awaiting tests. The field station is also equipped with an experimental set up for the measurement of ionospheric drifts. Recently a theoretical study has been made on the possibility of generation of atmospheric gravity waves by the diurnal motion of the heat source developed in the ozone layer. The implications of this phenomenon in relation to TID's and sporadic E over temperate latitudes have also been examined.

Elaborate receiving equipment for the detection and study of satellite transmissions at 10, 20, 40 and 41 MHz was fabricated at the Institute in 1965. Extremely long range propagation link was established for the first time between the low altitude satellite ORBIS and the Haringhata Field Station. Faraday fading and scintillation of transmissions from EXPLORER 22 and EXPLORER 27 were systematically recorded at Haringhata and pioneering contributions were made on the electron content characteristics of the equatorial ionosphere. The scintillation data obtained at Haringhata filled the gap in the global morphology of ionospheric irregularities at low latitudes. The characteristics of ionospheric irregularities around the magnetic equator have also been studied.

The Institute was the first station on the Indian subcontinent to record successfully Faraday fading of 136 MHz transmissions from the geostationary satellite INTELSAT 2F2 with a rotating antenna system. Continuous measurements of electron content and ionospheric irregularities made with these records have provided valuable data.

Currently, VHF transmissions from satellite INTASAT are being recorded at the field site. Instruments are under construction for the reception of signals from the Applications Technology Satellite (ATS-6) for ionospheric investigations.

The formation of ionospheric electron density irregularities by the interaction of the magnetospheric heat flux with the mid-latitude and auroral ionosphere has been studied theoretically. Work is in progress for developing a model of ionospheric irregularities over India with the help of in-situ measurements of satellite OGO-6 under the auspices of the Indian Space Research Organisation (ISRO). The Institute is a member of the world-wide Joint Satellite Studies Group.

Radiowave Propagation

An equipment was fabricated in the Institute for recording the integrated field intensity of atmospheric radio noise in the LF and VLF bands in 1961 and a programme was undertaken to study radiowave propagation characteristics and source phenomena. The records yielded valuable information on monsoon thunderclouds and precipitation. The recorder was also used in making systematic study of distant high altitude nuclear explosions and some interesting results were obtained.

Currently, studies are being made on ionospheric propagation characteristics by the reception of radio transmissions at LF, MF and HF bands. These observations have revealed unusual radio absorption events during major meteor showers, dependence of sudden ionospheric disturbances on the spectral hardening factor of the ionizing radiation as well as changes of field strength caused by ionospheric perturbations arising from atmospheric gravity waves.

Solar Radio Astronomy

In order to supplement ionospheric research, a solar radio astronomy section was organized in 1955. An equipment for the recording of solar radio emission at 100 MHz was constructed and installed at Haringhata in 1956. During the International Geophysical Year 1957-1958, solar radio bursts were successfully recorded from the active sun. With the decline of solar activity, theoretical investigations on solar radio emission were initiated and by making use of data obtained at different solar radio observatories around the globe, the spectra of the basic and slowly varying components of microwave

emission were delineated. The effect of the earth's orbital eccentricity on the received solar radio flux has also been studied and the result of this study is now used for making suitable corrections to the microwave flux recorded by solar radio observatories all over the world.

2. SOLID STATE ELECTRONICS

From the very beginning, research on electron devices was a major interest of the Institute. A vacuum diode (Type 80) was designed and successfully constructed in the Electron Tubes Laboratory of the Institute in 1949 under a CSIR scheme. This was the first electron tube made in the country. Work was continued for the improved design of vacuum tubes using potential analogs and other simulation techniques. In 1957, a project was undertaken for the construction of a CW S-band magnetron. The project was successfully completed and a magnetron was constructed, again for the first time in the country, in 1959.

The interest, however, presently shifted to solid state electron devices after the invention of transistors, and work on transistors and other solid state devices was started in 1954. In fact, this Institute may claim to be the first in this field of research in our country. Initially, attention was directed to understanding the physics of devices making use of commercially available transistors and significant contributions were made. As work progressed it was realized that a Solid State Laboratory should be organized with facilities for the construction of semiconductor devices on the one hand and for the study of the physics of semiconducting materials on the other. With the development of this laboratory research efforts were concentrated in the following areas : Electron Transport in Semiconductors, Semiconductor Microwave Techniques and Solid State Devices.

Electron Transport in Semiconductors

Hot-electron galvanomagnetic transport coefficients of elemental semiconductors and low-field transport in polar semiconductors have been studied in this section both theoretically and experimentally and a good deal of pioneering work in these areas has been carried out. The current instabilities observed in cadmium sulphide acousto-electric oscillators and in gallium arsenide Gunn diodes have also been studied in some detail. In fact, the first Gunn diode in our country was constructed in connection with these studies. Work on Gunn diodes is

being continued with a view to constructing CW diodes and developing microwave circuitry for Gunn diode oscillators. Hot-electron effects on semiconductor surfaces and in ternary materials are also being studied.

Using the facilities of the University Computer Centre an elaborate project has been undertaken to develop numerical methods for the evaluation of transport coefficients of semiconductors under all conditions. At present, this project is one of the major interests of this section.

Semiconductor Microwave Techniques

The Solid State Electronics Laboratory of this Institute is one of the few laboratories in the world where pioneering work has been done on the study of semiconductors by microwave technique. New microwave methods were developed here for the measurement of semiconductor parameters such as minority carrier lifetime, conductivity, dielectric constant and Hall mobility. The discovery of Faraday rotation in artificial dielectrics is one of the many pioneering contributions of this section. This work is being continued with nickel-powder artificial dielectrics.

A project is under way for the development of new methods for the measurement of electron mobility in organic and amorphous semiconductors.

Development of microstrip components is also one of the important activities of this section.

Solid State Devices

In this section, detailed investigations have been made on minority carrier lifetime, cut-off frequency, low frequency noise and physical and geometrical parameters of uniform-base transistors. Diffusion capacitance and stored base charge in graded-base transistors and electrical characteristics of unijunction transistors have also been studied. Indium antimonide Hall generators have been fabricated and their use as a 4-terminal circuit element has been investigated. Successful electroless plating on III-V compound semiconductors has been achieved and efforts are under way to make selective plating on non-conducting

substrates. Other fields of current interest include investigations on FET's, MOSFET's and metal-semiconductor barriers.

Studies on the high frequency negative resistance of p-i-n diodes and on multiplication gain and frequency response characteristics of avalanche diodes have been carried out. An interesting study has been made on a proposed new type of IMPATT device with two avalanche layers separated by a drift layers, which shows high frequency negative resistance over discrete bands of frequencies.

3. SYSTEM SCIENCE

Research in this field carried out in the Institute may be subdivided into three areas: Computer and Control Engineering, Circuits and Communication System and Bio-electronics.

Computer and Control Engineering

With the termination of World War II, scientists and engineers started taking increasing interest in the areas of feedback control systems and active networks, analog and digital computation and a host of other data processing systems including logic design and switching theory. Realizing the tremendous importance of these newly emerging branches of science and technology, a programme of research in these areas was undertaken at the Institute immediately after its inception, with the major objective of supplementing the graduate teaching programme. Around 1955, the design and fabrication of an electronic analog computer from locally available materials was undertaken. Many basic components of the computer involving new principles were constructed during the design stage. Important among these are analog multipliers, transfer function analyzers, different function generators and operational amplifiers. Around 1965, the analog computer came into operation. Since then it has been successfully used by students and research workers of the Institute as also those from other departments and research organizations to study various linear, nonlinear and statistical control problems, and problems of similar nature originating in other disciplines. To give an idea the variety of problems studied through the use of this computer, one may mention studies of nonlinear systems incorporating hysteresis type non-linearity, compensation of nonlinear systems by the deliberate introduction of nonlinearity and improvement of their response charac-

teristics, stochastic control systems and stability problems of nonlinear systems.

Simultaneously with the studies on analog computation and feedback control systems, investigations in the field of computer science were also started with particular emphasis in the areas of digital computer, logic design, switching theory and automata. Around 1959, researches on the minimization problem of switching theory were taken in hand and within a short time, important contributions were made. During the last 15 years research efforts in this area have been considerably strengthened and a good deal of pioneering work has been done on minimization problem, Nand network synthesis, threshold and multithreshold logic, cellular realization of Boolean functions, state assignment problems of sequential machines, fault detection and fault tolerant system design and memory minimization in microprogrammed digital computers. With the establishment of the University Computer Center at the Institute in 1971, the scope of research in these areas has been further widened.

This section also undertook some instrumentation projects primarily to equip and develop the Institute's teaching and research laboratories. Digital phasemeter, digital multimeter, digital capacitance meter, digital frequency meter are some of the instruments built under these projects.

Circuits and Communication Systems

Investigations in the area of circuits were initiated in this section with particular emphasis on the study of active networks, video networks, and networks of wideband amplifiers. Subsequently the scope of study was extended to the synthesis of distributed parameter systems using active elements, and a unified theory of analysing pathological networks was developed.

Investigations on communication systems were started at the Institute in the year 1959. Research efforts were directed to compatible single sideband transmission and reception, frequency modulation, carrier phase lock and sideband phase lock techniques and parametric amplification and some important contributions were made in these areas. Some feasibility studies on digital communication using the moon as a passive reflector and on optical communication were also made.

The activities of this section could not be maintained for nearly five years as the staff members engaged in this work left the Institute in 1964. However, the laboratory was revived in 1972 and efforts were mobilized to continue researches on modern communication techniques. Currently, research on coding techniques and digital communication is in progress.

Bio-electronics

The organization of a Bio-electronics laboratory to explore the applications of electronics in the field of biology and medicine has been one of the latest additions to the research activities of the Institute. An analog computer model of the human cardiovascular system has been developed and is being used for simulation study of the different circulation processes under different environmental conditions. Recently, a technique for deriving the exact model of a physiological system has been developed in this laboratory. At present, investigations are being carried out on optimally energized pacemaker, electronic model for human circulatory and respiratory systems as well as on a control system for automatic control of heart beat.

4. PLASMA AND QUANTUM ELECTRONICS

Research efforts in this field were mainly concentrated in the areas of Plasma Electronics and Quantum Electronics.

Plasma Electronics

Diagnostic studies on gas discharge plasmas by microwave techniques were undertaken in this section in 1962. Investigations were carried out on the determination of electron density and collision frequency in a narrow mercury-vapour plasma column by the admittance and cavity perturbation methods at 3 GHz. A study was made on the choice of the various cavity modes for the determination of radial electron density distribution in a plasma column by the perturbation method.

Quantum Electronics

Research efforts in this section have been mainly directed to the study of the properties of semiconductor lasers and of degenerate semi-

conductors as are relevant to their use in lasers. Investigations have been carried out on the dependence of such properties as the peak emissions shift with cavity Q , the line-width of spontaneous emission, the gain factor, the internal and external quantum efficiencies, the mode spectrum, the total stimulated light power, and the maximum time duration of the output pulse on temperature and doping, on laser length and reflectivity, and on magnetic field. Methods have been suggested for studying the effective mass of carriers, the spin-orbit interaction and the effects of band-tailing in degenerate semiconductors from the emission properties of semiconductor lasers. Work has also been done on some characteristics of electron-beam and optically-excited semiconductor lasers and of heterostructure injection lasers. Necessary modification of the generalized Einstein relation and formulation of expressions for the Debye length appropriate for degenerate semiconductors under various physical conditions are contributions of major importance made by this section.

BOOK REVIEW

The Politics of a Guaranteed Income : The Nixon Administration and the Family Assistance Plan, by Daniel P. Moynihan, pages 558 plus index, Affiliated East-West Press Pvt. Ltd., New Delhi, price Rs. 20, 1973.

The impact of the Welfare State on modern democracies is twofold. On the one hand, negatively, it indicates the abandonment of absolute *laissez-faire* as a guideline of state-activity. On the other hand, positively, it has hastened a synthesis of the merits of the libertarian ideal of capitalist individualism with the advantages of socialist control. No longer is the State allowed to sit idly over misfortunes of the individual particularly, over those which are more social than personal, more environmental than familial. A total view of the individual is now as important as a total view of the society.

The Welfare State concept has been supported vigorously by theoreticians of the British Labour Party, by Fabian Socialists and also by Liberals and Conservatives in Great Britain, and by architects of public policy of Benelux and Scandinavian countries. Statesmen of the U.S.A., undoubtedly, "the world's most powerful democracy," also began to mould their domestic policy accordingly. To bring about economic recovery after the first World War, the British Conservative Party had to relent in favour of some state control of private economic activities. President Roosevelt's New Deal plans also became famous in this direction, although, initially, the American Supreme Court tried to set them aside as affecting grossly the businessmen's right to work and own fruits of labour.

International economy was more dismal after the second World War. Wartime inflation and post-war unemployment began to eat into the vitals of families of even affluent countries. France created a Minister for Families in 1940 when the war was going on in full swing. In Great Britain, the Labour Cabinet introduced the broad-based social insurance scheme formulated by Lord Beveridge. What Lloyd George accepted as the basic objective for public policy from Bismarck, at last found a place in the statute-book, somewhat more mature and satisfying than all previous pieces of social welfare legislation.

Since joining his office as President, Richard Nixon seemed to betray almost a missionary zeal in removing imbalances in urban

dynamics in his country due to overwhelming economic pressure on American families. Involvement of the U.S.A. in wars in South East Asia meant a heavy drainage of resources which, otherwise, could have been utilised at home. Meanwhile American homes were feeling the pinch of economic distress. Through organised socio-economic research it was known how horrible were actual living conditions even in the big, fashionable metropolis of New York where Negroes and Puerto Ricans, Mexican-Americans and American Indians were huddled up in sub-human establishments. Such poverty amid plenty produced allied social problems like nihilist terrorism, race riots, broken homes, sexual illegitimacy, increasing divorce, high infant mortality and alcoholism. Black Americans lived in a "population siege." Coming from a poor family himself, President Nixon wanted some drastic governmental action to stem the rot, to save the poor, the disabled, the aged and the sick, reached through a massive anti-poverty programme that would free the individual and his family "from the myriad and inescapable forms of coercion which society exerts through the employment nexus." On August 8, 1969, President Nixon, in his historical Television Address to his countrymen, outlined the Family Assistance Plan (the F.A.P.).

Having so excellently explained the humanitarian history of the F.A.P. which he calls "singularly an American idea", Professor Moynihan of Harvard University and former U.S. Ambassador in India, distinguished both as a social scientist and as a public man, describes the dramatic events which ultimately led to the rejection of the F.A.P. by the Senate, after its acceptance by the House of Representatives in the 91st Congress during 1970-71. Mr. Moynihan can claim the authority to speak "both as a political liberal and a political scientist," having the unique distinction of participating directly and continuously, as a top counsellor, in the shaping of public policies of President Kennedy, President Johnson and President Nixon. The F.A.P., he rightly characterises, was such a radical programme that even a Yugoslav Marxist had to applaud it as a real piece of social welfare legislation. But the Liberal Government of Canada introduced a similar Family Income Security Plan in 1971 and even the Conservative Government introduced a parallel scheme of Family Income Supplement in Great Britain in 1972. There was, thus, a definite and distinct trend in favour of redistribution of income in some form or other in developing democracies to combat with poverty.

At first, the reaction was in favour of acceptance of the F.A.P. If passed, the *Newsweek* commented, "it will constitute a humanitarian

achievement unrivalled since the New Deal." Humanists like Martin Luther King welcomed it. But a "curious alliance of left and right" slowly gathered to condemn it as "a giant step deeper into the quagmire of the Welfare State." Some took it as "a disequilibrating act" while others regarded it as "Moynihan's most costly mistake."

Eminent social scientists like Cavala and Wildavsky propagated the view that "income by right" would run counter to the concept of "work and earn." Elizabeth Wickenden, a prominent social worker, proclaimed that the F.A.P. started from a false premise, namely, the assumption that causes of poverty lie among the poor themselves. Conservatives attacked the scheme as "neo-Marxist" while Labour Unions disliked it as damaging their potential bargaining strength by removing an important public issue to agitate with. If the Bill would be accepted, the Labour Unions might be looked upon as superfluous in future. Certain "Liberals" thought that the Bill wanted to legalise unearned income. Some of them, again, seemed to be over-zealous for economic equality and absolute justice and said, "A lot of people getting money from welfare don't deserve it." They did not care to explain what should be the standards for distinguishing between "the deserving" and "the undeserving" while distributing socio-economic benefits like Family Assistance.

While, thus, the press, the business community, welfare militants, social scientists and labour leaders disapproved of the F.A.P. in a chorus, opposition inside the Congress was no less severe. Liberal Democrats and Conservative Republicans stood together. The Bill was accepted by the House of Representatives, as stated before, though not smoothly, to be rejected ultimately by the Senate. And so it was that the F.A.P., with all its best intentions, could not formally enter into the statute-book as even in a modified form, it was thrown out by an amalgam of hostile forces which, between them, strangely enough, were opposed to each other. What brought them together, obviously, was the common concern of each group of interests that the Bill was going to affect them adversely. National interests were driven out unceremoniously by vested interests in unison. If this could be the state of conditions in a highly developed democracy, the hopeless state of public affairs in developing countries, where political norms, ideological as well as institutional, have not grown up sufficiently steadily in viable forms, could be well imagined.

To end with Moynihan's meaningful summing-up: "The 91st Congress had seemed destined for prolonged and bitter partisanship as between the parties, and between the Congress and the President."

A masterly summing-up of the Sisyphean, rather than the Promethean, destiny of a very good form of social welfare legislation in the Nixon era. The striking feature of this highly documented book is that while presenting the inside view of the Nixon administration, specially, of a legislative deal in which the learned writer himself was involved as its pilot, he could write about it so objectively, so dispassionately, that he revealed, at the same time, the complete detachment of an intellectual of a high order.

SOBHANLAL MOOKERJEA

Samāja-Saṃskāraka Raghunandana : (in Bengali) DR. BANI CHAKRAVORTY
pp. 298, price Rs. 10.00. Published by the author from 11, Kali
Kumar Banerjee Lane, Calcutta-2.

The study of the Dharma-Śāstra texts has its two principal directions, apart from the general one, which are followed by the researchers with a good schooling in the orthodox pattern of the training for a good number of years at the feet of a deeply revered *Guru*. Legal experts more or less inspired by a zeal of enhancing their prestige and scarcely by a sincere curiosity of unfolding the mystery of the original texts, just to get a comparative knowledge, make it a point to study the Dharma-Śāstra texts more or less with the help of the English translations made by scholars like Bühler, Jolly, Colebrooke, Southern, to mention only a few. But it is strange that amongst such experts in juridical literature there were some very remarkable personalities whose outstanding contributions are still regarded by the modern researchers in the subject as authoritative. Amongst the European scholars, Julius Jolly in his 'Out-lines of the History of Hindu Law' has presented for the first time a critical and systematic study of the Dharma-Śāstra texts including the digests on the point of inheritance. Sarvādhikārī in his Tagore Law Lectures almost on the same topic has demonstrated his scholarship and critical acumen of exemplary nature. Dr. G. D. Banerjee in his 'Hindu Law of Marriage and Strīdhāna' has utilised the Dharma-Śāstra materials on the subject by squeezing out the facts in a masterly way. Other names that deserve mention, are those of Dr. Trailokya Nath Mitra (The position of widow in Dharma-Śāstra), Dr. D. N. Mitra (Position of women in Hindu Law) and Dr. P. N. Sen (Hindu Jurisprudence). Among modern scholars of European countries

mention should be made of Dr. J. M. Derrett, Ludwick Sternbach and Ludo Rocher-these scholars have studied in short the legal aspects of Dharma-Śāstra texts. The sociologists, rather the social anthropologists of late have looked upon the Dharma-Śāstra texts as a source book for social history. They have felt that in their attempts to explain in the meaning and significance of the customs mainly among the tribals, it is desirable to have a good background of the Dharma-Śāstra texts, the provisions of which have been retained in some form or other amongst them in their evolutionary processes. Through their investigation sometimes the meaning of some of the Śāstric provisions become clear when it is shown from parallel instances. Both these studies are complementary and if it is possible to accommodate both these elements in the research of Dharma-Śāstra that will signal a new epoch in its study.

The *Nibandha* literature is a significant portion of the original Dharma-Śāstra texts. They are different in their characteristics from the literature in the form of commentaries of both the types, *Bhāṣya* and *Tikā* in the respect that the Nibandhas are not specifically affiliated to any Dharma-Śāstra in particular, while the commentaries are. But the fact remains that in course of time the Nibandhakāras themselves because of their subscription to particular line of thoughts, have formed several schools. The present book under review entitled "Samāja Saṃskāraka Raghunandana" by Dr. Bani Chakraborty is a remarkable attempt to assess the contribution of Raghunandana, the most distinguished member of the Bengal school of digest. It is distributed over eight chapters of which the first one discusses in general the nature of the subject and the subject matter of the second one relates to different questions concerning Smṛti in its relationship with other religious and quasi-religious literatures. The third is important in the sense that the author has attempted to present before us the historical background of the society in the Pre-Raghunandana age of Bengal. It would have been desirable to get these facts presented corroborated by more records of historical importance. The Fourth one also is informative in the sense that we find here a picture of Pre-Raghunandana digest-writers about whom a short information appears under three classifications from historical point of view during the regime of Pālas, the Senas and the Muslims. All these four chapters, however, may be treated as forming a back ground to the original topic concerning Raghunandana. The full details about Raghunandana are available in the fifth one. The sixth deals with the details regarding *Ācāra*, the seventh on *Vyavātāra* and the eighth on *Prāyaścitta*.

This, in short, is the subject matter of the thesis of Sm. Chakravorty and as far as possible her credit lies in the fact that in her own way in support of her contention, she has been able to quote from different Tattvas of Raghunandana—a job not a very easy one, for one who has not mastered those texts in original. While speaking eulogistically about the performance, it is deemed relevant and desirable to point out that the tone of critical approach, the basic quality of modern research, is hardly met with here. Some portions oftentimes have been inserted, let us say, only to increase the volume not having the least bearing on the exact topic. A reader, I believe, will have to work hard to assess exactly the contribution of Raghunandana in the reformation of the society of Bengal by merely cursory glance at the book. But these limitations should not belittle the value of the research of Sm. Chakravorty who is a sincere student in the field of Dhārma-Śāstra. It is expected that in future researches the single motive of critical approach should be her guide for a better production in the field.

HERAMBA CHANDRA CHATTERJEE

The World of Modern Fiction

Focus on Forster's "A Passage to India": Indian Essays in Criticism edited by V. A. Shahane. Orient Longman. 17 Chittaranjan Avenue, Calcutta; 700072. 1975. pp. xx+137. Rs. 40.

The Powys Brothers: A Biographical Appreciation by Kenneth Hopkins. Warren House Press, Southrepps, Norfolk, U. K. 1972. pp. xii+275. £ 2.25.

E. M. Forster's *A Passage to India* is generally regarded by literary critics on both sides of the Atlantic as one of the great novels of this century. But what about the critics on this side of the Indian Ocean? Be that as it may, *A Passage to India* is in no way a moving novel. It leaves the common reader, in the East as well as in the West, cold. For one thing, the story element is weak. This is something unexpected in a writer who knows, if anybody does, what an important role the story has to play in a work of fiction: 'Yes—oh dear, yes—the novel tells a story'. The trouble with Forster is that in this supposed masterpiece he is not content to remain a storyteller. He wants to be a philosopher as well. But story and philosophy,

in a novel like *A Passage to India*, are like the iron and clay in the toes of Nebuchadnezzar's image ; they may cleave, but they will not incorporate. This is what so severely limits the appeal of the novel. India, Forster suggests, is an enigma to him (and perhaps, by implication, to everybody else). It is a muddle, or a mystery. So is, for that matter, *A Passage to India*. Forster, I think, fails to pluck out the heart of India's mystery for the simple reason that notwithstanding all his liberal humanism and sympathy, he is lacking in what Albert Schweitzer calls 'reverence for life'. Forster is too keen a rationalist to have much of this feeling in him, or to have the experience of that celebrated Alsatian philosopher : "I too had thoughts once of being an intellectual, but I found it too difficult."

Forster's approach to India was essentially an intellectual's approach, an approach that was foredoomed to failure. Not so the approach of Walt Whitman, who supplies Forster with the cue for his title. The poet's intuition and humility win while the intellect and superior airs of the novelist fail. Forster is all for the proud truths of the wide world and the facts of modern science, but Whitman takes sincere interest in the ancient myths and fables of India :

The far-darting beams of the spirit, the unloos'd dreams,
The deep diving bibles and legends,
The daring plots of the poets, the elder religions ;
O you temples fairer than lilies pour'd over by the rising sun !

Whitman accepts them reverentially, he reaches the central region of the country. Forster dissects them scientifically, he cannot go farther than its periphery. He is always oblique, sarcastic, ironical. He has too much of the Bloomsbury snobbery. He emphasizes love but seems to be more interested in its external manifestation. The misspelling in 'God si love' can only fill him with contemptuous amusement. He is clever, knowledgeable, intelligent ; he is a good craftsman. But he is not noble or magnanimous ; not a great artist.

The reviewer may be allowed to be plain-spoken when his authors choose to be reticent. In fact, critical candour should have been conspicuous in a volume of Indian essays in criticism on *A Passage to India*, published to commemorate the fiftieth anniversary of the first edition of the novel (1924). As it is, most of the contributors prefer to be conventional and discreet. To say this, however, is not to cast reflections on the merit of the book. It has its own excellence and is a

welcome addition to Forster criticism. One can only wish that many of the Indian critics contributing to this volume could get rid of the inhibitory influence of their Western counterparts.

One of the notable essays in the present collection is that by Professor M. K. Naik. He has the courage of his convictions and avoids the usual eulogistic strain. In "Passage to Less than India" he examines Forster's novel in its historical, philosophical, and literary aspects and comes to the conclusion that in all the three aspects it "seems to suffer from severe limitations which its fame and success have glossed over." He rightly points out that Forster's picture of the Indians is as much coloured as his picture of the Englishmen in India. Aziz is hardly suitable as a protagonist since he has an element of unreality about him. He does not have an iota of the nationalistic fervour which characterizes the average educated Indian youth of the period. The philosophy from a letter written by D. H. Lawrence to Middleton Murry in the very year of the publication of the novel: "Forster doesn't 'understand' his Hindu. And India is to him just negative: because he doesn't go down to the roots to meet it." Is it any wonder that Forster fails to see the Hindu view of life in its right perspective when he has nothing but ridicule for the Gokul Ashtami festival at Dewas (which is the basis of his description of the festival in Book III of the novel)? In *The Hill of Devi*, which is an account of his life in India, Forster described the ceremony as "so fatuous. There is no dignity, no taste, no form."

Professor Naik is fully justified in looking upon Godbole as more of a caricature than a character. Dr. T. G. Vaidyanathan obviously thinks otherwise and joins issue with David Shusterman in "In Defence of Professor Godbole". We may concede him the point that Godbole is not an Advaita Vedantin but a Vaisnava of the *Bhakti* school. But does this transform him from a 'flat' character into a 'round' one (to make the distinction made by Forster himself in *Aspects of the Novel*)? What avails our discussion of *samipya* and *sayujya* when Forster does not miss a single chance of making Godbole ludicrous? Even if it can be argued (legitimately or otherwise) that Godbole has indeed reached one of the highest pinnacles of beatitude, how can we forget that at the very moment of his ecstatic experience he is made simply ridiculous by showing that "his gold pince-nez had caught in a jasmine garland, and lay sideways down his nose"? It seems to me that even his very name is ironical (in the same way that Becket's 'Godot' is ironical) and 'Professor', which is a sort of permanent epithet, only intensifies the irony. Perhaps if Forster's partiality for Islam be a fact, Professor

Godbole is made deliberately ludicrous so that he can be a foil to Dr. Aziz.

Of the thirteen essays in the book, four are principally concerned with the Caves. To Professor H. H. Anniah Gowda *A Passage to India* is a passage to Forster's mind and at the beginning of his paper, "To the Caves", he makes a statement without substantiating it: "Out of this charming understanding emerges a vision of India in keeping with her spiritual and ancient heritage." If any vision of India actually emerges from the novel, surely it is a disjointed and disturbing vision. Dr. C. L. Sahni attempts to interpret "The Marabar Caves in the Light of Indian Thought", especially the Advaita Vedanta system. He regards the expedition to the Barabar hills as a symbolic journey into the timeless past, a quest for Ultimate Reality. He finds it difficult to ascertain what Forster meant by the sound 'Boum' or bou-oum'. The Sanskrit word *vyoma*, meaning sky, heaven, ether, sound, is a common one and has been frequently used in Vedic and classical Sanskrit (one well-known instance is to be found in Kalidasa's *Raghuvamsa*, IV. 29): Siva is known as *Vyomakesha* because he is 'sky-haired'. Forster in all probability had this word in mind and might have used it either in its usual sense or in its derivative sense of 'void, nothing'. In "Marabar Caves Revisited" Dr. M. Sivaramakrishna is more concerned with philosophy in general than with Indian philosophy in particular. He finds his author firmly anchored to the prime aesthetic syndrome of the novel: illusion and reality. The caves to him are part of an aesthetic design and not the central item of a philosophic tract. Dr. Sujit Mukherjee makes "An Addition to the Case-Book on the Caves" in a pragmatic manner. He seems to believe in Forster's epigraph for *Howards End*, 'Only connect', and diligently attempts to connect his ideas of the novel to the real identity of the caves. The archaeological details of the Barabar caves, situated near Gaya (Bihar), are related to the Ajivika doctrine of destiny.

Mr. K. Natwar Singh also is indebted to Forster's epigraph and uses it in the title of his paper: "Onlyconnect... E. M. Forester and India". He agrees with Rose Macaulay that Forster's novel shows 'doubtful chronology' and examines some of its political aspects. He includes an account of his conversation with the novelist, whom he met in 1962 and asked about the Indian and British reactions to the novel at the time of its appearance. Dr. G. Nageswara Rao's point of view is somewhat similar to that of Mr. Natwar Singh. In "Gokul Ashtami: Resolution

of the Anti-thesis" Dr. Rao has, in addition, a metaphysical axe to grind : "Metaphorically Lord Krishna stands for the absolute, and Gopi [in Godbole's song] for the individual *Atma* whose goal is to unite with him." The supposedly spiritual significance of the Janmashtami festival is, however, questioned by Professor J. Birje-Patil, who ingeniously attempts "to draw a parallel between Lord Krishna's merriment as depicted by Forster and the Renaissance world of Gargantua and the kingdom of Erasmian folly." He is less far-fetched and more convincing when he links *Maurice* and *A Passage to India* in "Ducklings in Glass Troughs." Dr. Meenakshi Mukherjee, in a more straightforward approach indicated in the title of the paper itself ("On Teaching *A Passage to India*"), draws on her own experience of teaching English literature to Indian students. She thinks that the distinction between two kinds of social reality, positive and negative, made by the French sociologist Michell Zérafra is relevant to a proper appreciation of the novel.

The three remaining essays are "The Split Personality of E. M. Forster" by Mr. Asim K. Mukherjee, "A Stylistic Analysis of the Speech of the Indian Characters" by Mr. Bikram K. Das, and "Search for a Synthesis" by Professor Vasant A. Shahane, the well-known Forster scholar who has also written a discriminating introduction to the volume discussing the different papers. Professor Shahane thinks that Forster is idealistic as well as realistic ; the concept of Forster's "double vision", which is taken to be the core of the novel, is found illustrated in *A Passage to India*, while the search for a synthesis is exemplified in Godbole and his world-view.

There are certain disconcerting things about the book like its high price and misprints. In one of the essays, some phrases and lines have been lifted from Karl and Maganaler's *A Reader's Guide to Great Twentieth Century English Novels*. Yet, when all is said, *Focus on Forster's "A Passage to India"* is a stimulating volume. It consists of essays which are, by and large, well written ; the subject is always tackled with confidence and zest.

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If in India today Forster is one of the most eminent of the modern English writers, the Powys brothers are certainly among those who are least familiar to us. It is a pity that this should be so since they are great writers in their own rights and no proper assessment of twentieth century English literature is possible if they are left out. (Incidentally,

a piece of biographical information from Professor Kenneth Hopkins's monumental work on the Powys brothers may be of especial interest to Indians: "Their father [the Rev. Charles Francis Powys] took a curacy there [at Dorchester, Dorset] in 1879, when his brother Littleton, an army officer, died in India.") As in the case of Forster, the main literary contribution of the Powyses is in the field of English fiction. In the recent past increasing critical attention has been paid to this extremely talented band of writers who, as a family group of litterateurs, are as remarkable as the Brontes of the Victorian age or the Sitwells of this century.

Of the three Powys brothers, John Cowper (1872-1963), Theodore Francis Powys (1875-1953), and Llewelyn Powys (1884-1939), the eldest is the most versatile. A prolific writer who has written poetry (*Wolfsbane Rhymes*, *Madragora*, and *Samphire*), critical studies (*Visions and Revisions*, *The Pleasures of Literature*), and philosophical essays (*The Meaning of Culture*), J. C. Powys is primarily a novelist and will be chiefly remembered as such. His immensely readable *Autobiography*, marked by admirable comprehensiveness and candour, gives us an engaging self-portrait. His first important novel, *Wolf* was published when he was in his late fifties. It was followed by *A Glastonbury Romance* (1932), *Weymouth Sands* (1934), *Maiden Castle* (1936)—all of them reminiscent of his boyhood and youth and can be described as studies in self-exploration. After he had settled in Wales, J. C. Powys wrote his historical novels *Owen Glendower* (1940) and *Portius* (1951), which give us some idea of his philosophy. He wrote a few fantasies, including *Atlantis* (1954). A great lover of life and Nature (the influence of Blake, Wordsworth and Dickens on him is clearly discernible), he can combine realism with romance and write with gusto. His introspective nature is as much revealed in his novels as his power of description. Altogether, his novels have a uniqueness of their own.

Unlike J. C., T. F. Powys is not highly educated. As a novelist, he is also less popular. His early novels like *Mark Only* (1925) show something of Hardy's pessimism, but he gradually developed a style of his own, which has been described as "dream-like grotesquery and ambiguous symbolism". One will seek in vain for J. C.'s realism or romances. Nor is T. F. interested in characterization. That is why in his novels the 'flat' characters outnumber the 'round' characters. He novels have a glaring unreality about them but that in no way minimizes their vitality, a vitality almost Dickensian. *Mr. Weston's Good Wine* (1927), which is his *magnum opus*, presents God in the rôle of a travelling

wine-salesman visiting a tiny Dorset hamlet. We are reminded of Brecht's drama. T. F.'s symbolism is, however, more complicated, and his appeal subsequently less universal. *Kindness in a Corner* (1930) is in a much lighter key, while *Unclay* (1931) in a more sombre one. He has written a number of short stories and novellas also.

Llewelyn Powys is more an essayist and miscellaneous writer than a novelist. He is also less famous than his elder brothers. His first important work was published in collaboration with J. C.—*Confessions of Two Brothers* (1916). *Ebony and Ivory* (1923) and *Black Laughter* (1925) give us his experiences of East Africa. *Love and Death*, an 'imaginary autobiography', is among his best known works. *Skin for Skin* (1926) is a volume of reminiscences. His popular novel, *Apples be Ripe* (1930), is a simple story, with something in it "wild and challenging". Professor Hopkins considers the early chapters of this novel almost wholly autobiographical. Consumptive from his early youth, Llewelyn Powys had to undergo a lot of physical and mental suffering. But this does not cast its dark shadow on his work, which has been rightly described as a celebration of nature, of country folk and of life.

There are already a number of biographies and critical studies of the Powyses but this one by the well-known writer and critic Professor Kenneth Hopkins, published in the year of the centenary of J. C. Powys, is unique in so far as it is the only comprehensive survey of all the three brothers of the remarkable literary family. We have nothing but admiration for this masterpiece of scholarship, notable as biography and criticism alike and thoroughly enjoyable reading. we warmly recommend it to our readers.

VISWANATH CHATTERJI

EDITORIAL NOTES

A group of students of the Department of Archaeology of the University of Calcutta recently discovered some terracotta figures of the Goddess Sakti and also a toy chariot of Indra. The students have been working at a site near Chandraketugarh. A terracotta mould that has been found has been dated to the second century B.C.

The Ghani Committee's recommendations are now under discussions between the Calcutta University and the West Bengal Government. Among the highlights of these recommendations is the proposal that the undergraduate colleges of the university (213 in all at present) will be brought under several regional councils; for the present, three such councils have been proposed for the Calcutta colleges, one for those in Howrah and Hooghly, and another for Midnapore.

Mr. A. L. Dias, Governor of West Bengal and Chancellor of the University of Calcutta, speaking on the occasion of the diamond jubilee of the institution of Asutosh College—named after the great Vice-Chancellor of the University, Sir Asutosh Mookerjee—referred to some unhappy aspects of university education today, especially delays in holding examinations, and frustration among the students. The Vice-Chancellor, Dr S. N. Sen, said that the situation about discipline has improved; he hoped that there would soon be a restoration of a proper academic atmosphere.

It is learnt from an official press release that there has been restoration of normal examination schedules in a number of universities in the country; all but 14 of the universities of the country have conducted their examinations on time; it is expected that these 14 universities too will soon recapture the punctuality of their examination schedule.

The results of the Calcutta University's B.A. and B. Sc. Part II examinations of 1975 (held in December 1975) were published on July 26, 1976.

A scheme recommended by the Calcutta University's Syndicate proposes the creation of a lectureship after the name of the late eminent scholar Mahamahopadhyay Gopinath Kaviraj.

On Tuesday, the 3rd August, a function was held at Raj Bhavan, Calcutta, Sri Anil Mondal of the Calcutta University received the

Chancellor's trophy from Mrs. Joan Dias. Sri Mondal was the only weightlifter from India who participated in the Montreal Olympic. The Chancellor, Mr. A. L. Dias, the Vice-Chancellor, Dr. S. N. Sen, the Pro-Vice-Chancellor (Business Affairs and Finance) Mr. Arun Ray spoke on the occasion.

On the history of education of the western type in India, and especially in Calcutta, the name of John Eliot Drinkwater Bethune has an indelible impress. He was the founder of Bethune College and School, an institution which has been in the front rank of women's education in this country, an institution whose alumni have always stood in the front line of every activity that pertains to the welfare of the nation.

The one hundred and twenty-fifth anniversary of Bethune's death was observed on Thursday the 12th August last. Mr. Subrata Mukherjee, The Minister of State for Information of the Government of West Bengal, placed a wreath on Bethune's grave at the Lower Circular Road cemetery (which contains, incidentally, also the grave of Rose Aylmer on whose death the poet Walter Savage Landor wrote an unforgettable poem); following Mr. Mukherjee, wreaths were placed by other persons. A meeting was held at the Bethune College Hall in the afternoon when several persons paid their homage to the memory of the noble-hearted Englishman. The School brought out a valuable brochure devoted to Bethune.

The name of Bethune, along with those of Henry Vivian Derozio and David Hare, shines in the records of Bengal's education. Bethune is reputed to have written some poetry though we have not been able to attach his name to anything beyond some translations. He was also a mathematician and a linguist. When Michael Madhusudan Dutt sent him a copy of his book of English poetry, *The Captive Lady*, Bethune advised him to switch over to his mother tongue, Bengali, as a medium of creative writing. Michael Dutt accepted Bethune's advice and, with *Meghnad-nad kavya*, launched on his incomparable career as a poet in Bengali.

Bethune College, perpetuating the name of John Eliot Drinkwater Bethune, is a valuable affiliate to the University of Calcutta.

In its meeting of the 13th August, the Syndicate of the Calcutta University accepted the recommendations of two Selection Committees with regard to two appointments : (a) the appointment of Dr. Bhabatosh Chatterjee M.A., D. Phil., D. Litt. (Cal), to the Sir Gooroodass Banerjee

Professorship in English, a chair that has been lying vacant for some time since the superannuation of the earlier incumbent : and (b) of Dr. Nalini Kanta Chakrabarti to the Professorship in pure Mathematics.

On wednesday, the 18th August, the Vice-Chancellor appointed Dr. M. K. Das Gupta M. Sc., Ph. D. (Manchester) as the head of the Department of Radio Physics and Electronics for a term of two years. Dr. Das Gupta succeeds Dr. J. N. Bhar who retired some weeks ago.

The Vice-Chancellor also directed the Registrar to table a motion for the consideration of the Academic Council for setting up a Department of Computer Technology. In anticipation of the Council's acceptance of the motion, the Vice-Chancellor has appointed Professor Arun Chaudhuri as the Head of this Department for two years.

The Academic Council of the Calcutta University, at its meeting held on Tuesday the 24th August, accepted a resolution that the M. Phil. Course in Economics will be introduced from January, 1977. The Council also accepted the report of a committee which has recommended the starting of a one-year postgraduate certificate course in Sports Medicine and Science.

An Ordinance has been promulgated by the Governor of West Bengal, amending the Calcutta University Act of 1966 ; the Ordinance relates to the procedure to be followed for the appointment of the Vice-Chancellor of the University. The term of the present Vice-Chancellor, Professor Satyendra Nath Sen M. A., Ph. D., expires on October 31 next. In accord with this Ordinance, published in the Calcutta Gazette Extraordinary, the Vice-Chancellor will be appointed by the Chancellor, in consultation with the Minister of Education, from a panel of three persons whose names will be recommended by a committee ; the committee will be constituted for this purpose. The committee will consist of five members ; two of these members will be nominated by the Syndicate of the University ; one member by the Academic Council of the University, one by the Chairman of the University Grants Commission, and one by the Chancellor ; the nominee of the Chancellor will be the chairman of the committee. The committee will meet in accordance with the directions of the Chancellor. In case the Chancellor does not approve the panel recommended by the committee, he can call for a fresh panel. The Vice-Chancellor appointed according to this procedure will hold office for four years and shall be eligible for reappointment.

TO CONTRIBUTORS

A. BOSE

1. Contributors are requested to send *clearly-typed* (double-spaced) copies with the fewest possible cancellations and corrections ; the copy must be typed on one side of the sheet only.

2. Contributors are requested to use *back-notes* ('Notes and References') and not foot-notes ; foot-notes are inconvenient to the press compositor and the proof-reader. Contributors will please ensure the correct correspondence between the note-numbers within the article and the numbers in the Back-notes.

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OUR CONTRIBUTORS

We have the privilege of publishing an address by the former President of India, Shri V. V. Giri.

We have also included two Convocation Addresses by the Vice-Chancellor of the Calcutta University, Dr. S. N. Sen.

Ramgobinda Chatterjee : M.Sc., Ph.D., is the University Professor of Psychology and the Head of the Department of Psychology, Calcutta University.

N. Sanyal : M.Sc., is a research worker.

Anil Kumar Mukherjee : M.A., Ph.D. (Cal.), teaches Philosophy in the Ramananda College in Bishnupur (Bankura, West Bengal).

Abhijit Sankar Das Gupta : M.A., is a Research Fellow in the Department of Sociology, Delhi School of Economics.

Asoke Mustafi : M.A., is an Assistant Professor in the Hooghly Mohsin College, Chinsurah, West Bengal.

G. C. Chauley : M.A., is the Curator of the Archaeological Museum in Nalanda.

Sanghasen Singh : M.A., Head of the Department of Buddhist Studies, University of Delhi.

Samuel S. Bichford : formerly, Instructor in English, Friendship Junior College, Rockhill, South Carolina, USA.

Jogesh Chandra Bhattacharyya : M.A., Premchand Roychand Scholar ; Asstt. Professor in English, Maulana Azad College.

Soma Ray : A student in the undergraduate classes, is a poet of high promise ; her poems were published in a earlier number of this journal.

G. B. Saha : M.Sc., Ph.D., is a member of the Department of Psychology of the Calcutta University.

Debal Kumar Chakrabarti : M.A., is a Lecturer in English in the Bangabasi College, Calcutta.

Amarendranath Pal : M. Com., L.L.B., Ph.D. (Cal. Univ.) a worker in the university has recently been awarded the doctorate on the basis of a valuable original work.

(Mrs.) Sarbani Ganguli (Chakrabarti) : M.A., is a U.G.C. Research Fellow in this university.

Heramba Chandra Chatterjee : M.A., Professor of Sanskrit and Pali in Sanskrit College, is a distinguished scholar.

Sobhanlal Mukherjee : M.A., Ph.D., D.Litt is the Professor in Political Science in the Hooghly Mohsin College, Hooghly, West Bengal.

Viswanath Chatterjee : M.A. (Cal.), is a Reader in English, Jadavpur University.

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